

Highways



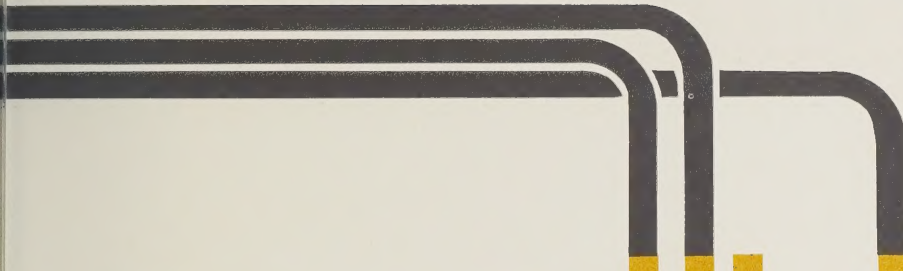
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NEW JERSEY STATE HIGHWAY DEPARTMENT
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Highways

A REVIEW OF THE
NEW JERSEY STATE HIGHWAY DEPARTMENT
1954 - 1962



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LETTER OF INTRODUCTION



STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

December 29th
1961

Honorable Robert B. Meyner
Governor, State of New Jersey
State House
Trenton, New Jersey

Dear Governor:

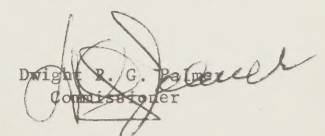
In presenting this report of our stewardship of Highway Department responsibilities during the period of your two Administrations, it is difficult to adequately express our appreciation for your unfailing support of our endeavors to meet the needs of the public in the field of highway transportation. Your forceful leadership has been a continuing guide to our efforts. We could not have asked for more.

Not only has New Jersey experienced its greatest advances in highway construction during the period 1954-1962, but much has been accomplished in promoting the over-all efficiency of the Department in an effort to give the citizens of our State the fullest possible return on their investment.

The Highway Department is "big business" spending as it does upwards of \$175,000,000 a year and must function with as many of the techniques of modern industry as are possible for a governmental agency.

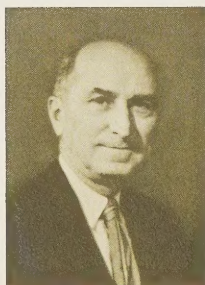
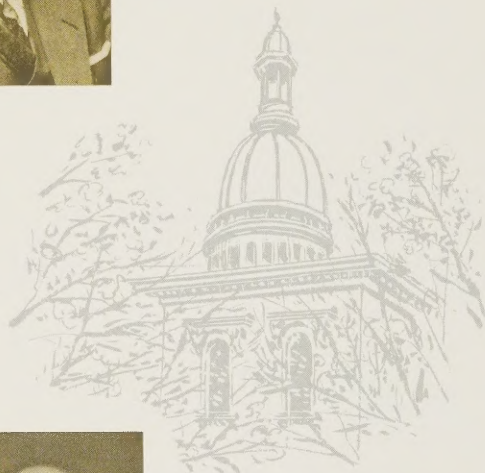
Reviewed in this report are some of the steps and accomplishments that have established the years of your administration as those of greatest achievement in the history of the Highway Department.

Respectfully submitted,

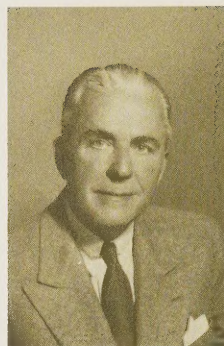

Dwight R. G. Palmer
Commissioner



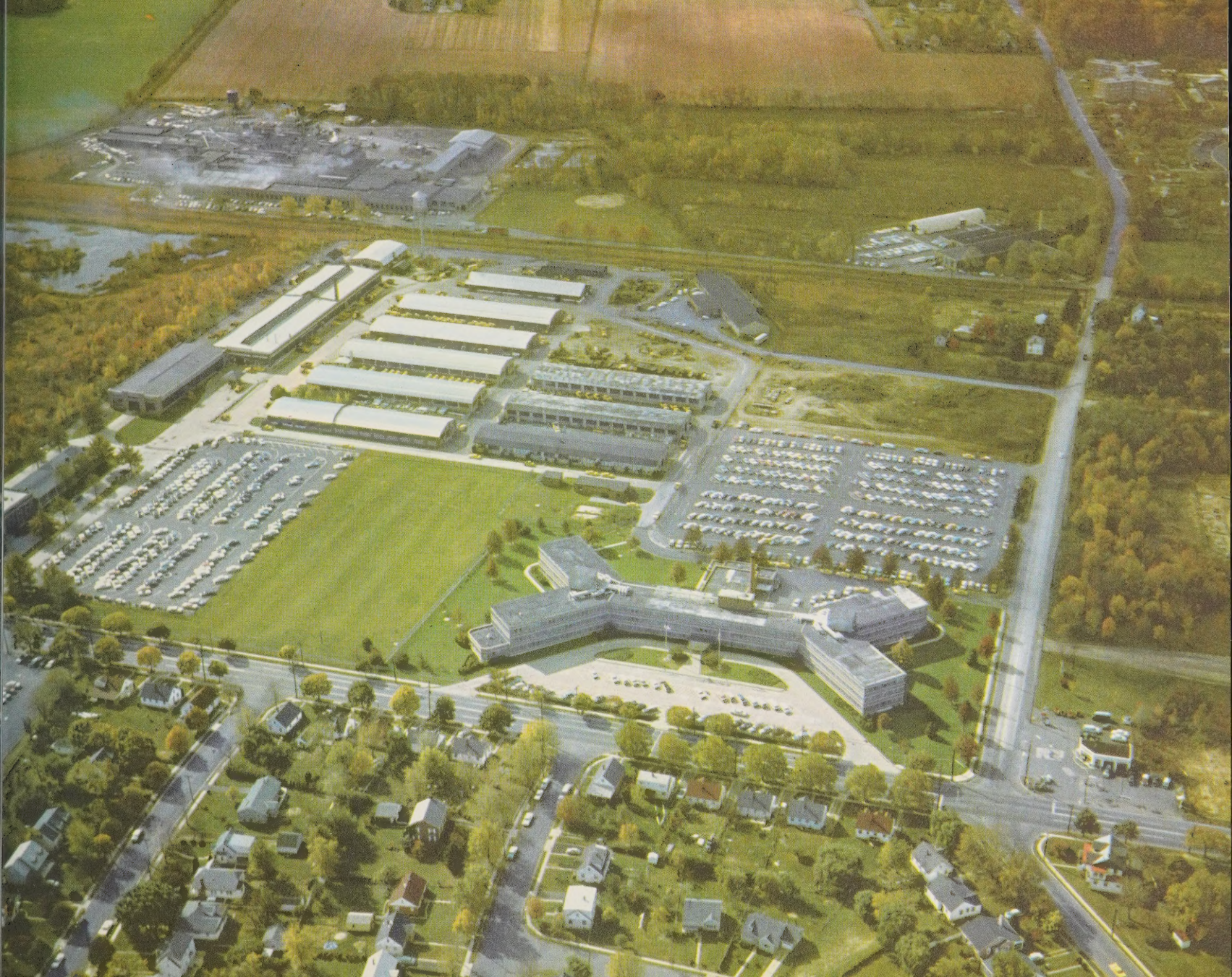
ROBERT B. MEYNER
Governor

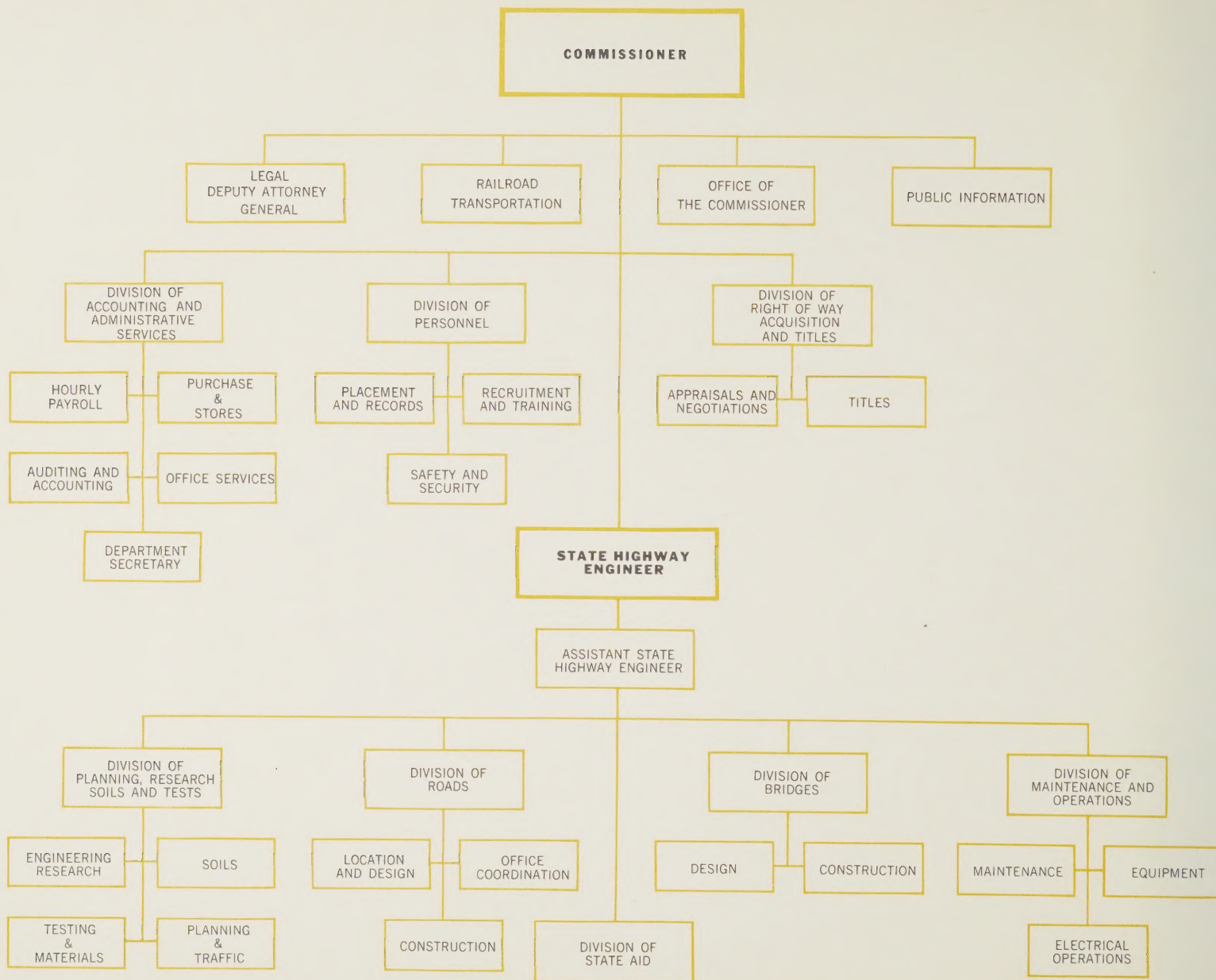


OTTO H. FRITZSCHE
State Highway Engineer



DWIGHT R. G. PALMER
State Highway Commissioner





FOUNDATION FACTS

HIGHWAY HISTORY

Long before New Jersey was colonized, Indian trails crossed overland from north to south and east to west. Although seldom more than eighteen inches wide, these trails formed the basis of the principal routes used by the Dutch and English settlers. The Minnisink Trail, Upper Road and Old Burlington Path were familiar horse and rider trails more than 100 years before the American Revolution.

By 1673 the Colony of East Jersey felt the need for better means of overland transportation and in that year the General Assembly passed the first Public Roads Act. This law was followed three years later by an Act calling for the construction of a road between Middletown and Piscataway, a distance of about 17 miles. Road building horizons were further broadened in 1682 when an Act was passed for "making and settling of highways, passages, bridges and ferries."

With the construction of these primitive roads, people and goods were no longer confined to one locality. Overland vehicular transportation became possible and by 1766 the trip from New York to Philadelphia could be made on regularly scheduled coach runs in two days over Kings Highway. It is interesting to note that Route 1, with traffic volumes of 100,000 vehicles a day, is today's counterpart of this historic stagecoach highway.

Throughout the 1800's, when plank roads and turnpikes came to the fore, New Jersey maintained its position of leadership in



road building and before the era ended twenty-five turnpikes were in operation in our State.

In 1891 New Jersey moved to the foreground in the national roads picture by becoming the first state in the Union to grant State aid in the construction of public roads. The Legislature provided this aid by paying one-third of county roadbuilding costs, appropriating \$75,000 annually for this purpose.

Early Needs

By the turn of the century a new powerful voice had been added to the clamor for good roads. In addition to the farm-to-market group the growing number of bicycle clubs became a factor in the movement. They needed hard-surfaced roads to accommodate the wide activities of their membership. The answer was an increase in highways surfaced with water bound macadam.

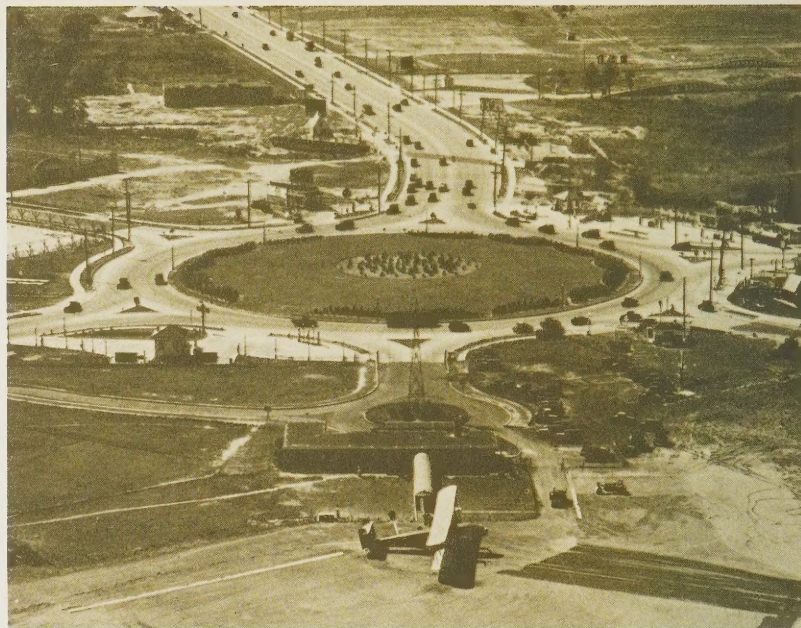
The next important step in New Jersey highway development occurred in 1909 when the Legislature created a State Highway Commission consisting of the Governor, President of the Senate, Speaker of the House and a Commissioner of Public Roads. The principal function of this Commission was to supervise preparation of a plan for an "Ocean Highway" from Atlantic Highlands to Cape May.

First System

Three years later, in 1912, the Legislature recognized the need for an integrated statewide road system by directing the State Highway Commission to establish a comprehensive State Highway System. The system was not to exceed 1,500 miles in length.

It was under this act that the network took hold and began to grow, and in 1912 New Jersey laid its first section of concrete road at New Village in Warren County. It was in this period that more durable characteristics were embodied in road construction in time for the upsurge of the motor age.

In 1917 the State Legislature again stepped conspicuously into the highway picture. Following a less successful attempt of the previous year to institute a workable road building and improvement program, the 1917 act created a State Highway Department to be governed by a State Highway Commission of eight members, two of which were required to be qualified and competent engineers. The Governor was designated as a member ex-officio, and



NEW JERSEY'S FIRST TRAFFIC CIRCLE—CAMDEN

the commissioners to be appointed by the Governor, with advice and consent of the Senate. At the same time, the Legislature created the nucleus of the State Highway System of today by designating fifteen routes as comprising the system.

Following World War I the automobile increased its popularity and the need for more and better highways was evident. There was also the demand to "get the farmer out of the mud." This resulted in many hard-surfaced roads being constructed by counties as well as by the State in the more sparsely settled sections of New Jersey. Late in the 1920's some roads were widened to three lanes and emphasis was placed upon further

development of the intersection. This was the period when New Jersey built its first "cloverleaf" and first traffic circles, as well as its first divided roadways. State highway expenditures reached their pre-World War II peak in the early 30's when many new routes were built and dual highways became the design standard where traffic volumes justified their construction.

Organizational refinements of the Highway Department were undertaken by the Legislature during this period of highway expansion. In 1923, the eight-man commission was replaced legislatively by a four-member commission, then in 1935 supplanted with a single Highway Commissioner to serve under the Governor as administrative and operating head of the Department.

Advanced Design

Throughout the 1920's and 1930's New Jersey excelled in bridge and pavement designs, cloverleaves, overpasses, traffic circles and divided highways. In later years it has pioneered in the construction of limited access highways, jughandle intersections, center barriers and low-level fluorescent bridge lighting.

Numerous factors inspired this pioneering; New Jersey has the nation's second greatest density of population, one of the highest industrial outputs, a geographic location at the hub of the largest world market, one of America's highest ratios of automobile ownership to population and 127 miles of famous seashore resorts attracting upwards of 60,000,000 visitors a year.

1954-THE PROBLEM

To better understand the State highway situation as it existed when the present administration came into office in 1954, it is essential to review the preceding "post-war" period. Following the construction renaissance of the 1920's and 1930's, road building in New Jersey came to a virtual halt with America's entry into World War II. Not until 1946 and 1947 did construction resume with token programs of \$16.8 million of combined State and Federal funds. In fact, construction programs averaged less than \$40 million a year until the year 1956.

This paucity of funds found New Jersey unprepared for the post-war traffic onslaught. Not only did registrations increase one million between 1946 and 1956, but travel patterns changed materially. The exodus to the suburbs and beyond created new transportation problems. As a result, traffic congestion heretofore largely confined to cities, became a suburban, and even a rural problem. Many highways were overburdened with traffic volumes of twice their design capacity. Traffic fatalities on State highways were an ominous 6.6 persons per 100 million vehicle miles of travel.

The inadequacy of New Jersey highways in terms of this traffic explosion was only part of the problem confronting this administration in 1954. Of equal importance was the need to provide for the increased traffic of the predictable future. Conservative



HIGHEST PRIORITIES ARE GIVEN TO PROJECTS THAT WILL RESOLVE TRAFFIC CONDITIONS WHICH CAUSE ECONOMIC LOSS.

estimates were that by 1975 travel on the State System would triple to 23.5 billion miles a year—or about 66 million travel miles per day.

As a first step in attacking New Jersey's highway problem the Commissioner in 1954 directed the development of a Master Plan for construction. This plan was based upon current and future needs as indicated by population, registration and travel projections to the year 1975.

When completed in 1956 the plan was taken into each of the 21 counties by the Commissioner and members of his staff and reviewed with county and municipal officials—a distinct departure from prior Department policy. The final plan reflects many constructive suggestions received during this statewide tour.

The heart of the Master Plan is a statewide network of 821 miles of new freeways. The Interstate System part will comprise 376 miles. Also planned is the dualizing or widening of more than half of the existing 1,862 miles of the State Highway System.

Since finalization of the Master Plan, it has been used as the framework upon which each of the Department's annual construction programs has been planned, with priority being given to those projects which will alleviate or solve the most immediate traffic demands. This policy led to the construction of key sections of new freeways rather than the completion of any one particular route from end to end.

The cost of completing the Master Plan will be between \$2¾ and \$3 billion. With the exception of the Interstate Defense highways, for which the Federal Government pays 90 per cent of the cost, all other improvements called for under the plan will be constructed either on a 50-50 State-Federal matching basis or with 100 per cent State funds. A matter of great concern is the glaring deficiency in funds as present estimates of combined State and Federal funds available for the next 15 years, unless our Legislature recognizes this need, will fall about \$1 billion short of the cost of the over-all plan. This money must be forthcoming or the economy of the State will be seriously jeopardized.

MONEY-THE MAGIC INGREDIENT

Fundamentally, any Highway Department's construction program in the main depends on the "magic ingredient"—money. In New Jersey, unlike most other States, the Highway Department has been dependent solely upon inadequate allotments as expressed in the annual legislative Appropriations Bills. Such "hand-to-mouth" financing has not only prevented the Department from constructing badly-needed highway facilities, but has also severely hampered its long-range planning program. In spite of the foregoing, the amount expended on the State Highway System during the eight fiscal years 1954-62 will exceed that spent during the entire thirty-six year prior history of the Department.



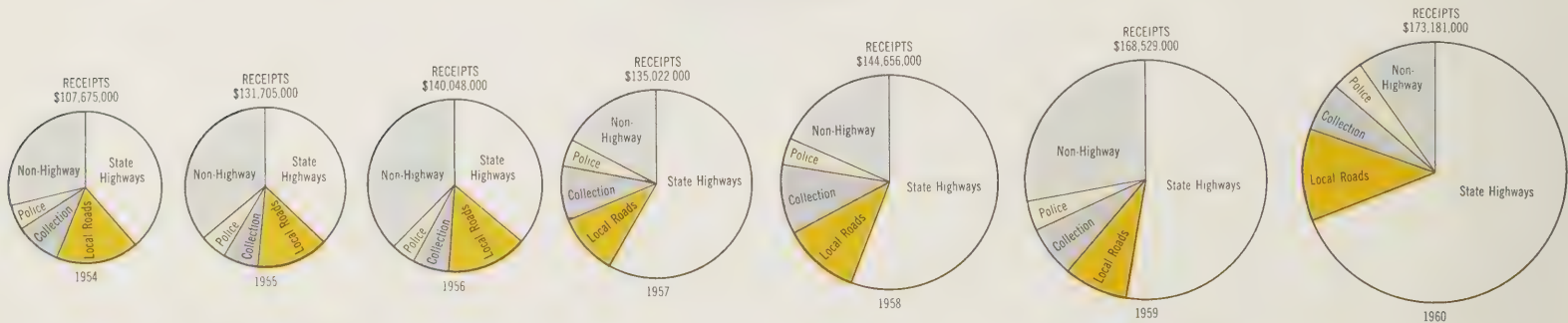
We understand that twenty-seven states of the Union dedicate all Motor Vehicle revenues to highway operation and construction. Some eight or more other states have bond issues supported by Motor Vehicle revenues, so we have thirty-five or more states adequately financed with sufficient funds not only to match Federal funds as they become available, but to contract for highway construction well in advance of the availability of such funds. New Jersey cannot start its program when Federal funds become available under prevailing practices but must wait until the Legislative Budget Committee determines the amount of the allotment for highways. It might also be of interest to note that when the Highway Department assumed Mass Transit responsibilities and it was necessary to expend approximately \$6,000,000 to prevent a shut-down of commuter passenger service

and still another \$1,000,000 for grade crossings in the Camden area, the Legislature met these needs by taking these amounts from the already inadequate State Highway Department budget.

Responsibility Set

In his first Budget Message to the Legislature, covering fiscal 1954-55, Governor Robert B. Meyner laid down the policy that "the State should rely for future highway expansion on the State Highway Department." To carry out this responsibility, it was necessary to eliminate "lingering deficits" in the Department's construction budget which were the result of failure by the State in prior years to appropriate the full amounts needed just to match annual Federal grants.

DISPOSITION OF REVENUES* FROM NEW JERSEY HIGHWAY USERS 1954-1960



Source—U.S. Bureau of Public Roads

*Motor Fuel Taxes and Motor Vehicle Fees

After the Department suffered some penalties of reduced Federal assistance, the Legislature, persuaded by the Administration's logic, increased the annual highway construction budget to an amount sufficient to match Federal aid and also provide some funds for construction of projects not eligible for Federal assistance.

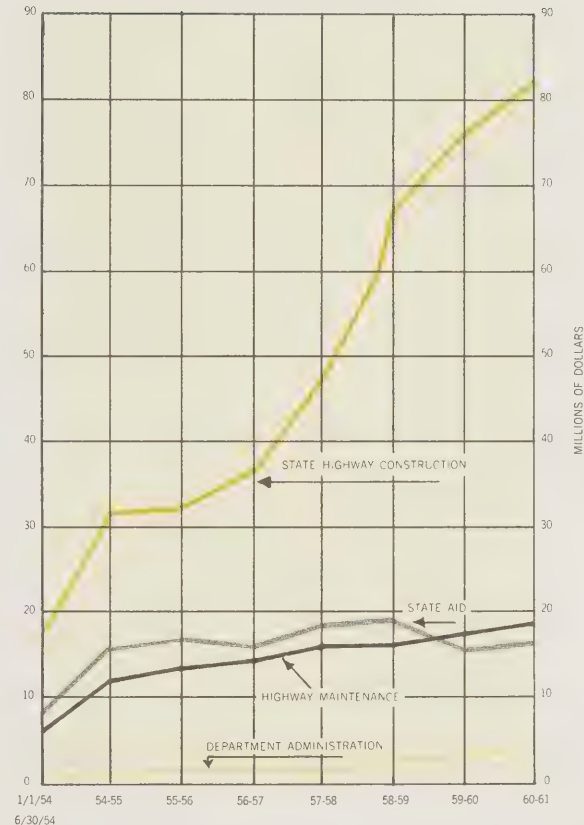
Though present allotments are enough to assure completion of the system of Interstate Routes on schedule, improve the safety and capacity of major existing highways and construct some sections of entirely new Primary and Urban Routes, they are far below the amount needed for completion of the Master Plan. Conservative estimates indicate a minimum of \$60 million in additional funds over and above the present allotment of both the Federal and State governments each year is required.

Diversion

At this point it might be noted that a total of \$242 million of the so-called "highway user" revenues has been used for purposes other than highways. In New Jersey from fiscal 1953 to 1961 the records of the Federal Bureau of Public Roads record that at least \$242.5 million has been put to other State purposes. In fiscal 1960-61 alone \$16.8 million of Motor Vehicle revenues have not been available for highway purposes.

Since July 1, 1954, a total of \$677 million has been available to the Department for highway engineering, right-of-way and construction during the period ending June 30, 1962. Of this amount \$12 million was on hand at the start of the 1954-55 fiscal year;

COMPARISON OF PRINCIPAL STATE HIGHWAY
DEPARTMENT EXPENDITURES
JANUARY 1, 1954 - JUNE 30, 1961



\$432 million has been made available by the Federal Government; \$215 million by the State; and \$18 million by participating authorities.

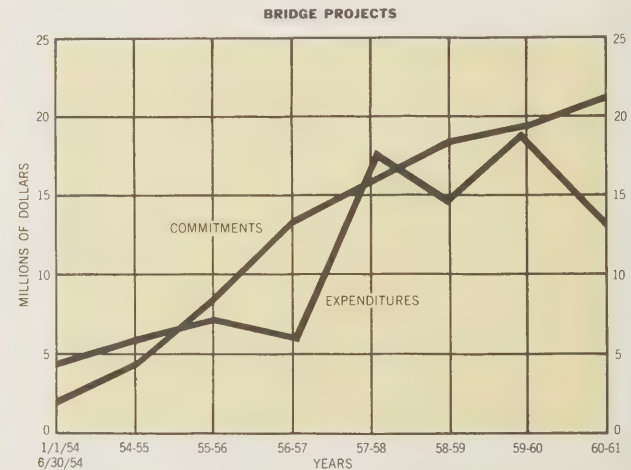


Net obligations incurred for engineering, right-of-way and construction during the same period totaled \$514 million to November 10, 1961.

Contracts Underway

Approximately \$150 million worth of contracts were in progress June 30, 1961—\$12 million in engineering, \$50 million in right-of-way, and \$88 million in construction of roads and bridges. Construction projects advertised and awarded between July 1 and December 30 amounted to \$67 million.

There is another way of viewing the fiscal record on State highway construction: within the 36-year period from the creation of the Department in 1917 to December 31, 1953, preceding the first inauguration of Governor Robert B. Meyner,

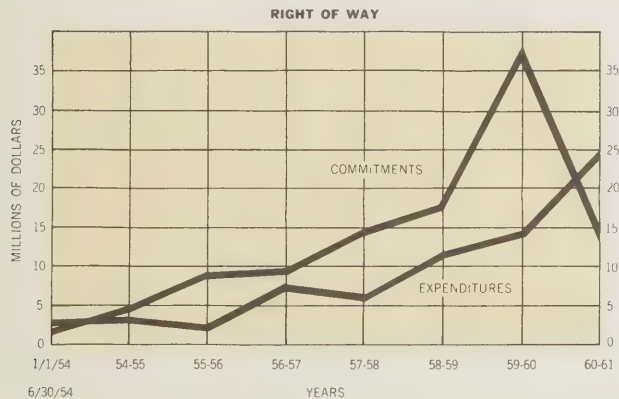


expenditures and obligations amounted to \$604 million. From January 1, 1954, through June 30, 1961, expenditures and obligations totaled \$509 million—a period of only 7½ years. Also another \$85 million will be out for bids or committed for by December 31 making a total of \$594 million.

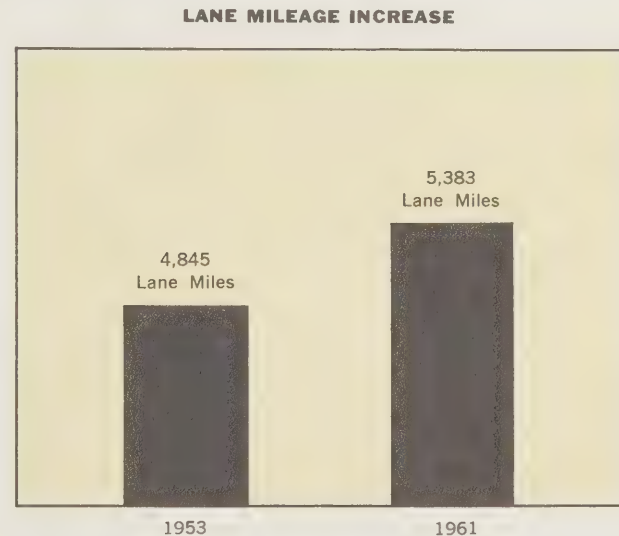
New Projects

Plans are well advanced, particularly insofar as Interstate Routes are concerned, on projects estimated to cost in excess of another \$150 million. Placing these projects under contract in the remaining six months of the current fiscal year will deplete the Department's construction account to \$45 million.

What are the citizens getting for their money? The over-all improvement in the safety, capacity and convenience of the Highway System has been substantial, yet much remains to be done. Mileage alone does not tell the whole story. The Highway



System has many components other than just roadways. Some two-lane rural routes become four-lane arteries linking burgeoning residential developments. Grade separations replace intersections and concrete center barriers take over from grassy center islands. Jughandles provide safe left turns. Bridges and overpasses are erected. Traffic signals and highway lights are installed. New signs appear. The State Highway System is constantly subject to change. Research in the laboratory and sections of in-service highways composed of different materials, dimensions and realignments are undergoing trial under various temperature and traffic conditions.



THE CHANGING HIGHWAY PICTURE

Over-all Expansion

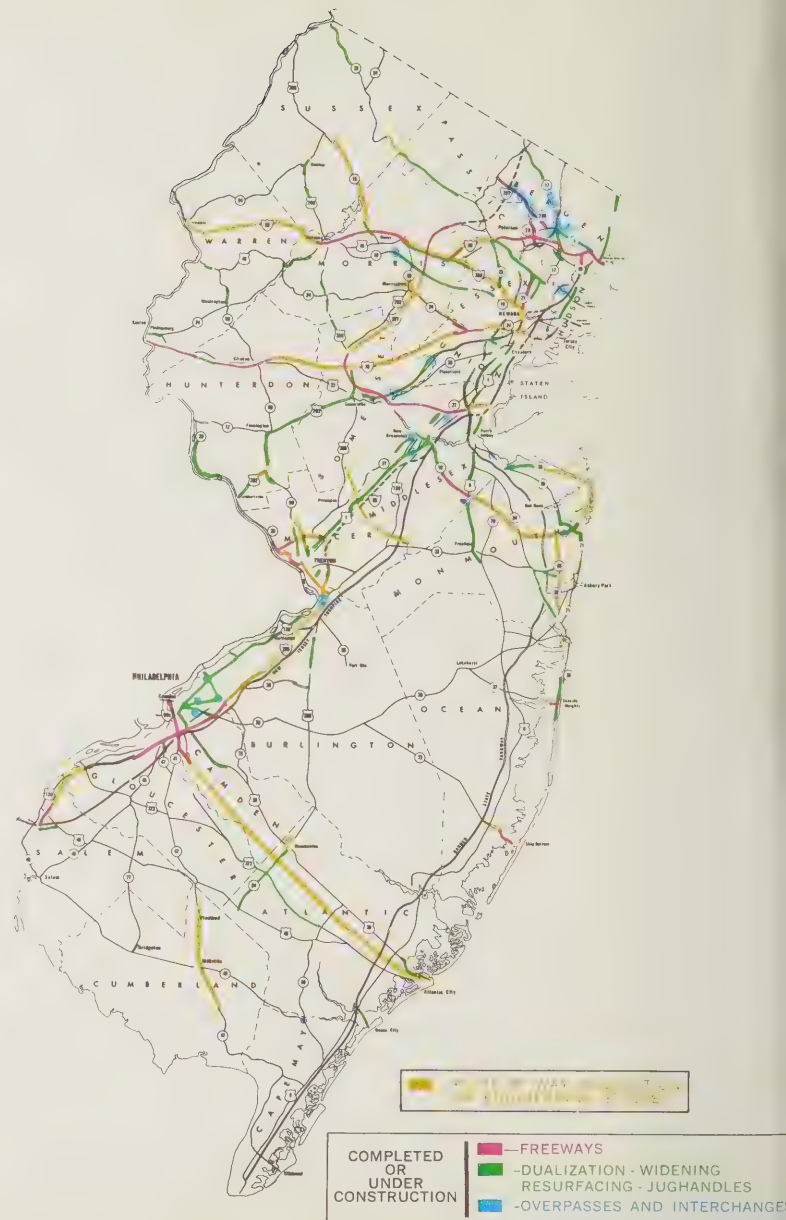
Construction in new locations since the end of 1953 amounted to approximately 100 miles, the bulk of it in the form of multi-lane, divided highways. An additional 186 miles of existing highways have been completely reconstructed and another 110 miles widened. This tally, of course, does not include bridges and miscellaneous construction nor safety work at intersections and other hazardous locations.

The capacity of the system is really best measured in terms of lanes. At present, the System comprises 1,139 miles of two-lane highways, 33 miles of three-lane highways (rapidly being expanded to four lanes), 447 miles of four-lane undivided highways, 183 miles of four-lane divided highways, 4 miles of five-lane divided highways, 61 miles of six-lane divided highways, 9 miles of eight-lane highways and 2 miles of 10-lane highways—a total of more than 5,383 lane miles.

New Lane Miles

Since the System totaled 4,845 lane miles at the end of 1953, there has been an increase of 538 lane miles, virtually all four-lane and six-lane highways with "accessories" thereto.

An outstanding characteristic of the State Highway System in New Jersey is its large number of bridges. It is estimated there will be 2,124 bridges of all types at the close of the current fiscal year, representing construction of 324 new spans and replacement, reconstruction or widening of 309 old spans.





CONSTRUCTION OF THE MANAHAWKIN BAY BRIDGE CUT MAINTENANCE COSTS AND ELIMINATED CONFLICT BETWEEN WATER AND HIGHWAY TRAFFIC.

In terms of financing, the Department constructs highways under three classifications: Interstate Routes, with the Federal Government paying 90 per cent of the cost, the State 10 per cent; Primary and Urban Routes, with the Federal Government paying 50 per cent of the cost, the State contributing the other half; and 100 per cent State projects. The Department is also responsible for checking the plans and supervising construction or

improvement of Secondary Routes, with the cost divided on a 50-50 basis between the Federal and County Governments and supervising all state aid projects, both county and municipal.

THE INTERSTATE SYSTEM

Work on the 376 miles of the Interstate Defense System in New Jersey has comprised the bulk of the Department's construction effort since the 90-10 program was instituted in 1956-57.



TOP LEVEL PLANNING INSURES ORGANIZED PROGRESS.

Normally a minimum of two years is required from the time a major construction project is first planned to the time actual construction starts. Completion of the project frequently requires another two or more years. This time-lag varies according to the complexity of the project and the area through which it passes, but is particularly acute in urban areas. Thus, the Interstate construction instituted by the Department in 1956-57,

operating under the financial plan we are obligated to, is only now beginning to show really substantial results.

Mass. Plan

The Department has concentrated on construction of six, eight and even ten-lane highways in heavily populated areas in preference to building long sections of two or four-lane highways in rural areas. The planned new policy has been to provide



MULTI-LANE INTERCHANGES SIMILAR TO THE JUNCTION OF INTERSTATE ROUTE 95, ROUTE 4, AND COMBINED U.S. 1, 9 & 46 IN FORT LEE ARE NECESSARY IN URBAN NEW JERSEY.

new facilities first where they are needed most and to avoid the temptation of claiming credit for mileage constructed in the "wide open areas." This also has the advantage of saving the State millions of dollars in right-of-way costs.

The Interstate program has been planned and coordinated so that all major Routes, in urban areas, should be completed in 1965-66. The remaining mileage can be comfortably completed by the 1972 Federal deadline for completion of the entire System.



The 375.9 miles of Interstate Routes allotted to New Jersey includes 54.1 miles of toll roads* incorporated into the System with the approval of Federal authorities to spare the cost of constructing entirely new parallel routes and better utilize the

*The Department's policy, approved by the Federal Bureau of Roads, is to avoid paralleling toll routes while they are adequate to handle the traffic. This policy also provides funds where urgently needed at other locations. Also, we have no desire to create unnecessary competition and jeopardize the securities of such toll roads as are held by our citizenry and institutions.

funds elsewhere. Another 51.1 miles has been built by the Highway Department and is now open to traffic. In the period from 1956 through 1961, the Department will have completed 24 miles of Interstate projects at a cost of \$72 million. On June 30, 1961, 33 miles of construction was in progress at a cost of \$109 million and 120 miles of engineering and right-of-way at a cost of \$99.5 million.

Federal Allocations

For the period from 1956-57 through 1961-62, the Federal Government has allocated \$315 million to New Jersey for construction of Interstate Routes. Of this, \$30 million of the current year's grant (1961-62) will be committed with Federal Bureau of Public Roads during the last six months of the fiscal year.

A Federal allocation of \$62 million for 1962-63 could be used now if State matching funds were available, as is the case in most other states.

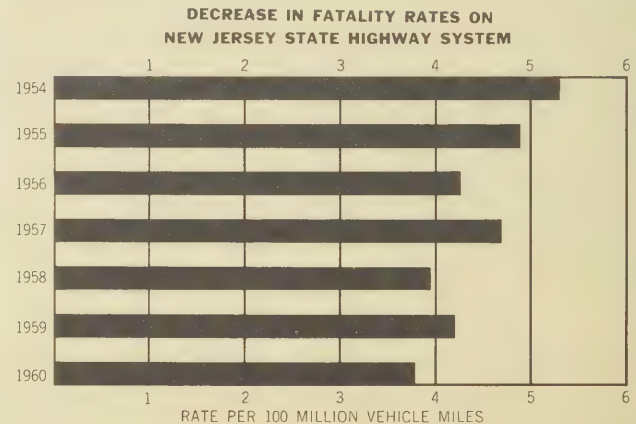
PRIMARY AND URBAN PROJECTS

The Primary and Urban Program has been provided with a combination of State and Federal funds that have ranged from \$25 to \$30 million a year since 1953. This has required all major construction projects fitting into this category to be built in stages. A large portion of the money, necessarily, has been devoted to the improvement of existing routes. This has been all 50-50 money—Federal and State.

The Federal Bureau of Public Roads credits New Jersey with completion of \$125 million worth of such projects from July 1, 1954, through June 30, 1961, covering 255 miles of highway. Not all of this mileage represents complete construction. On June 30, 1961, engineering, right-of-way and construction was in progress on 80 miles of such projects at a cost of \$70 million.

NON-FEDERAL PROJECTS

State funds provided within the same period for non-Federal State projects have amounted to \$60 million and have been devoted largely to safety construction, rehabilitation of roads and bridges, and other work designed to eliminate "sore spots" and to keep the existing Highway System from deteriorating.



WORKLOADS AND EXPENDITURES

The increase in the annual workload in recent years has more than tripled—producing a corresponding steady rise in employment by contractors, material suppliers and engineers' staffs. One of the great intangibles in measurement of highway progress is safety. The State Highway System has enjoyed a dramatic drop of 2.1 fatalities for every 100 million miles of travel since 1953. During the same period the corresponding rate has dropped .9 fatalities on all roads and streets in the State.

Construction of new highways as referred to previously is only part of the picture of the Department's responsibilities. A breakdown of annual operations shows the following amounts were expended for purposes other than construction and right-of-way during the period from January 1, 1954, through June 30, 1961:

Maintenance and Operations	\$113,367,254
Purchase of Plant and Equipment	7,632,532
Administration and Laboratory	8,790,189
County and Municipal Aid	140,897,314
Flood Loss Damage	3,910,283
Secondary and Feeder Road System (Federal-County)	24,932,641
Division of Railroad Transportation	5,161,698
TOTAL	<u>\$304,691,911</u>

The Department has also expended approximately \$9 million on behalf of other State agencies for construction of institutional roads and approaches.

When added to the amount provided for construction, the total expended and committed by the Highway Department during the eight calendar years 1954 through 1961 will exceed \$900 million. If the eight fiscal years from July 1, 1954, through June 30, 1962, are considered, the total amount will exceed one billion dollars.

This rather substantial sum could not have been made use of wisely and efficiently without full use of some of the administrative techniques normally associated with the competitive efficiencies of private industry and business.



INTERSTATE ROUTE 80

GROWING PAINS

DESIGNING NEW ROUTES

No discussion of the Department's record would be complete without mention of the manifold difficulties encountered in construction of new superhighways through crowded urban areas. The impact upon the local residents and the economic life of the community is tremendous, not to overlook the problems created for the Department.

The Department maintains a firm policy of designing individual sections of highways to conform with local needs wherever compatible with cost and good design. Due to this consideration for local preferences, there have been some complications where Interstate alignments must pass through densely populated areas. Lengthy consultations with local officials, civic groups, and, in some cases, individual citizens are more or less routine. Not infrequently, especially during certain periods both at the national and local level, political representatives play a part. Extensive public hearings have been held. In each instance we endeavor to resolve these issues through patient negotiation.

A review of three of the new Interstate Routes now in varying stages of progress provides graphic illustrations.

BERGEN-PASSAIC EXPRESSWAY

The eastern sections of Interstate Routes 80 and 95 within our State form a portion of the "Bergen-Passaic Expressway." This multi-lane superhighway will funnel traffic into Manhattan via the George Washington Bridge. It was one of the several urban expressways which had been dormant on the planning boards for many years prior to 1954.

To date it has received the largest share of money obligated under the Federal-State 90-10 program—almost \$100 million. The earliest difficulty and one common to design of all Interstate routes was the problem of alignment, particularly in the vicinity of Leonia, Englewood, Lodi, Ridgefield Park, Bogota and Teaneck. Here was a classic example of everyone publicly stating the need for the route but wanting it in "the other fellow's backyard."



INTERSTATE ROUTE 95 AND 495

The Federal Bureau of Roads, in line with its over-all national policy, staunchly supported the most direct line possible through this area. On the basis of the Department's own studies, it was felt that a "button hook" line curving in a tight semi-circle to the north and back again immediately adjacent to the bridge would provide all the necessary advantages of quick and convenient travel with least damage to the homes and businesses of the area. Consequently, it was necessary to again embark on a long series of negotiations before Federal approval of the recommended line was obtained. During this period the Highway Commissioner and members of his staff without precedent conferred personally with officials of every municipality along the route. These meetings, some 15 or 20 in all, were held "after hours" to accommodate local officials.

Due to the marshy area of some of the land to be traversed by Route 80 in Bergen County, it was necessary to arrange the

construction schedule so that adequate foundations were prepared well in advance of paving operations.

More than 8 miles of Route 80 has been opened to traffic in the heavily traveled corridor from Netcong to Denville in Morris County. It is anticipated that this section will be linked with the Bergen-Passaic Expressway by 1965-66.

ESSEX EAST-WEST FREEWAY

Decades before the Route now designated as Interstate Route 280 was even reduced to a proposed alignment, Essex County was making desperate attempts to obtain an east-west expressway serving Newark and the Oranges. All attempts to translate this desire into reality failed for various reasons and for lack of sufficient funds to build such a superhighway through this congested area.

The coming of the Interstate Program in 1956 indicated the

possibility of providing a way out of the dilemma. Unfortunately, the original Interstate System did not include an east-west route serving Essex County. The initial efforts of the Highway Department, therefore, were directed toward persuading the Federal Bureau of Public Roads that the East-West Freeway would better serve the over-all transportation network than the original designation of N.J. Route 3 for improvement to Interstate standards.

Complete Studies

This required exhaustive comparisons of land and property, businesses, employment and many other aspects along Route 3 and along the general suggested line of an east-west freeway. On the basis of a very complete study and years of consultation with Federal engineers, the Freeway (instead of existing Route 3) was designated in 1957 as part of the Interstate System, to be known as Route 280. This reclassified Route 3 as a 50-50 route with the State committed to move ahead on construction of this highway.

With this accomplished, the Department then proceeded to design the new superhighway. It was impossible to reconcile the desires of municipalities along the route for a completely depressed freeway with the amount of Federal and State funds available. The Federal government agreed to participate to the extent of 90 per cent of the cost of an elevated highway expected to cost \$65 million. The additional cost of depressing the route along almost all of the section from Newark to Livingston was estimated at \$13 million. The Federal government agreed that the State

could build a depressed freeway if the added cost was financed with other than Federal funds.

After more than a year of negotiations with bankers, engineers and the New Jersey Highway Authority, the Department evolved a plan whereby the Highway Authority would provide the Department \$13 million in return for the right to collect tolls on a section of the Garden State Parkway now toll free. The plan's provision for an interchange of the East-West Freeway with the Parkway will aid in relieving congestion on local streets, reduce up-keep costs, and ease a bottleneck on the Parkway caused by the large number of motorists who use only the toll free section in Essex County. The plan is expected to have a very wholesome effect on the Parkway's over-all financial structure by adding substantial revenue from its connection with the new

INTERSTATE ROUTE 280



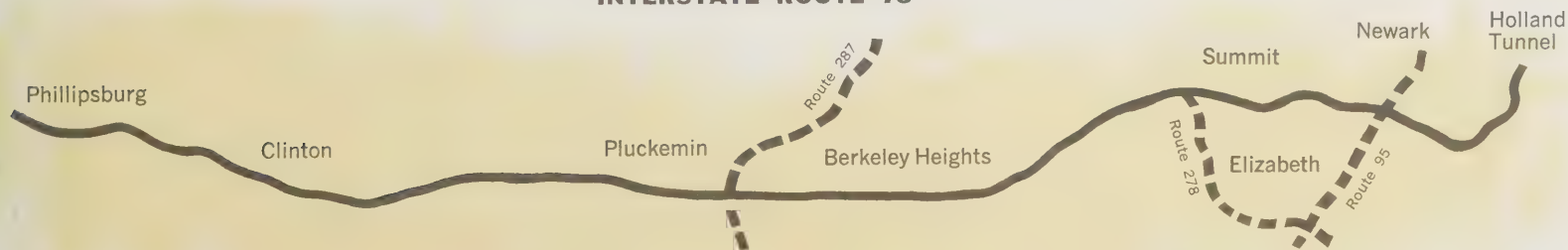
Freeway. This entire plan had Legislative approval. It should be noted that the State guarantees \$285 million of the total outstanding bonds of the Parkway.

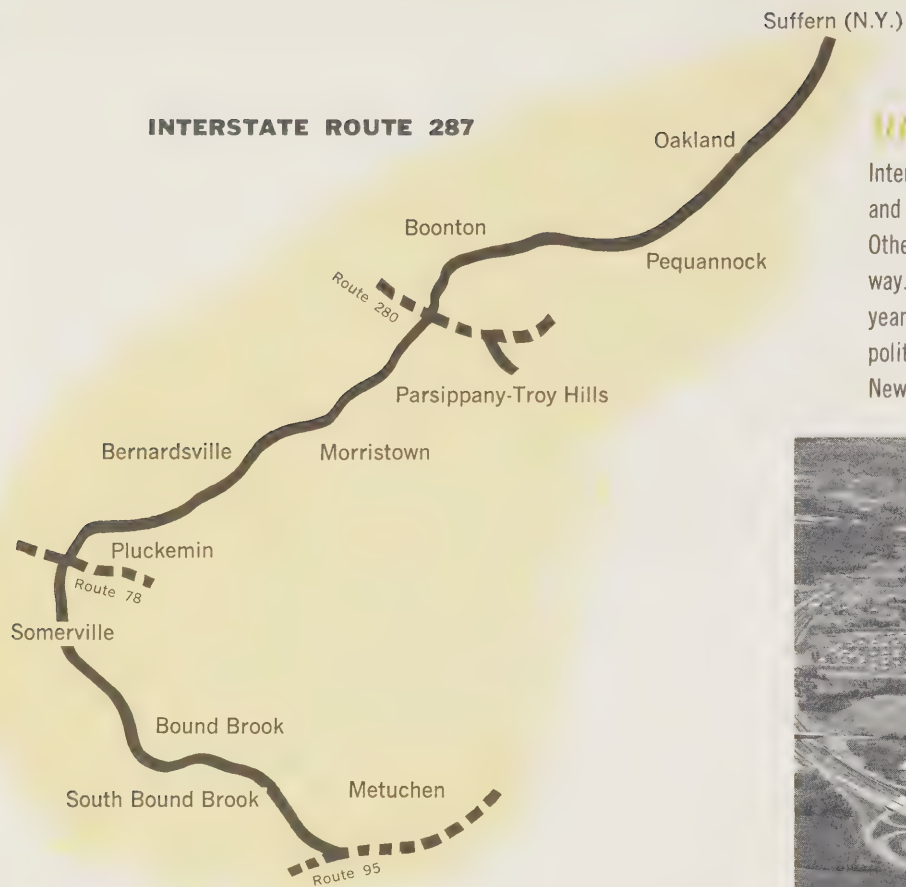
At this stage another problem presented itself. It was originally proposed to carry the Freeway over the Parkway in order to ease the burden of traffic which would be thrown on local streets during the period of construction. However, legislators, representatives, residents and local officials urged putting the Freeway under the Parkway despite the fact that engineering difficulties in regard to drainage and maintenance could not be determined without exhaustive engineering studies. The financing plan was approved by the Legislature this year, with the understanding that the Freeway would be carried under the Parkway "if tests now in progress demonstrated this would be a sound engineering procedure." On the basis of these now completed tests, the decision to carry the Freeway under the Parkway has been made. Right-of-way and construction plans are now perfected, and a substantial sum has been obligated for the purchase of properties along the right-of-way.

Further issues developed with the desire of some West Orange officials and residents for a tunnel through First Mountain instead of an open cut. When other efforts to obtain a tunnel failed, West Orange interests resorted to utilizing Civil Defense "shelter needs" as a vehicle to obtain tunnel construction. Of course if such a shelter is needed, one could be erected for much less money than "torturing" a Defense Highway at the cost of many millions of dollars. Such diversion is far afield from any realistic concept of a "defense" facility intended for the rapid emergency movement of large numbers of men and vehicles. The excessive cost of such a tunnel would be about \$13,000,000 and if it is to be sealed off as a highway and used as a shelter, added monies would be required for pure air, sewage, lighting and general housing expense. The Highway Department is proceeding—as it must—on the basis of existing authorization from the Federal Bureau of Public Roads for a design completely divorced from the tunnel theory.

Public hearings on the balance of the Route from Livingston to Parsippany-Troy Hills, where it will join with Interstate Route 80,

INTERSTATE ROUTE 78





INTERSTATE ROUTE 287

MIDDLESEX EAST-WEST FREEWAY

Interstate routes fall into several categories. Some like Route 80 and Route 78 are trunk lines running clear across the State. Others such as Route 287 are "off-shoots" from the main highway. Interstate Route 287, which had been planned for many years as the Middlesex Freeway, forms a belt around the metropolitan area connecting all of the routes which point toward New York City.

have already been held. It is hoped, in the absence of further delays, that this Route will be completed by 1965-66. Such is the "progress" of a highway wanted for generations but further delayed by a few indefatigable proponents of any plan just to avoid going through a given area.



A COMPLETED MIDDLESEX EAST-WEST FREEWAY PORTION OF INTERSTATE ROUTE 287 IN THE BOUND BROOK AREA

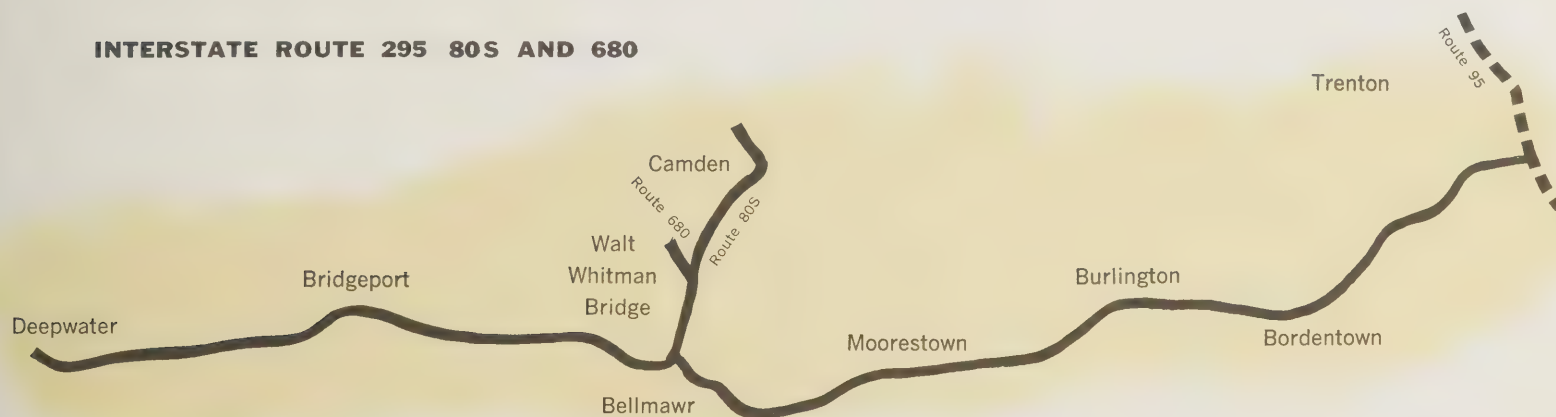
It is expected that the portion of this "belt" running from Route U.S. 1 at Metuchen past a connection with Route 80 in the north will be completed in 1965-66. A considerable stretch in the congested Bound Brook area is completely open. The problem still facing the Department is the determination of an alignment through Morristown. The best alignment from a traffic and engineering viewpoint aimed at providing the maximum in access at lowest cost passes between properties of historical value and a local high school—the highway being depressed in substantially all of this area and without the slightest encroachment on either of the aforementioned. In conforming with the Department's policy of preserving historical properties, the Highway Department evolved a design which will enhance the value and accessibility of Washington's Headquarters rather than damage it.

MODERNIZING THE HIGHWAY SYSTEM

RELIEVING METROPOLITAN STRANGULATION

As has been cited, much progress has been made by the Department in the anticipated relief of metropolitan area traffic strangulation through its policy of having initiated planning and construction of urban sections of the Interstate System. Already benefits of this policy have "paid off" in the Camden-Philadelphia metropolitan area where the combination of Interstate Routes 680, 80S and 295 are serving as free-flowing arteries for traffic to clear the congested metropolitan core. Similar benefits will be seen next year in the metropolitan areas of Bergen and Passaic Counties served by Interstate Defense Route 80.

INTERSTATE ROUTE 295 80S AND 680



Other practical efforts of the Department to clear the way for traffic to move through metropolitan areas have been made in the form of new non-interstate freeway construction such as Route 21 in Essex County and Route 42 in Camden and Gloucester Counties. The latter route siphons traffic from Interstate Route 80S and distributes it clear of the Camden metropolitan area.

INTERSTATE ROUTE 80S CHANNELS PHILADELPHIA-CAMDEN AREA TRAFFIC TO AND FROM THE WALT WHITMAN BRIDGE.



The Route 21 Freeway provides for the free movement of traffic between the Newark area and Route 3 in Passaic. Future planning calls for its extension northerly to Interstate Route 80 in the Paterson area.

Constructed portions of Route 29 Freeway provide quick ingress and egress to Trenton, and its extension southeasterly to a connection of Route 206 in the vicinity of Bordentown will resolve the long-standing problem of traffic movement in a generally east-west direction through the Trenton metropolitan area.

New construction by the Department such as the Bayonne East-side Industrial Highway (Route 169), has promoted the utilization of industrial land areas. This new route extends from Jersey City to Constable Hook in Bayonne and serves the U.S. Naval Depot and a variety of industrial and commercial establishments along Bayonne's eastern border.

IMPROVING THE CORRIDOR ROUTES

Great emphasis has been placed by the Highway Department in improving the safety factor for motorists and reducing the traffic over-burdens prevailing on sections of the principal corridor routes through New Jersey.

The four principal corridor routes serving metropolitan New York and the Delaware Valley industrial complex are Route U.S. 130 between Deepwater and the New Brunswick area, Route U.S. 1



TYPICAL JUGHANDLE PROVIDES LEFT TURN AND TURN-AROUND MOVEMENT

between Trenton and the New York metropolitan area, and Routes U.S. 22 and 46 which bisect the state in an east-west direction between the Delaware and Hudson Rivers.

Fundamental engineering plans employed by the Department have provided jughandles, overpasses, center barriers, creeper lanes.

A jughandle eliminates left and U-turns from active traffic lanes of a highway. It is usually built into an existing intersection and consists of a one- or two-lane ramp that curves away from the highway then back to the highway so that vehicles wishing to cross the main artery may do so at a right angle and under traffic signal control.

CENTER BARRIERS PROVIDE A POSITIVE MEANS OF SEPARATING OPPOSING DIRECTIONS OF TRAFFIC.



OVERPASSES OF THE TYPE LOCATED AT THE INTERSECTION OF ROUTES 4 AND 17 PERMIT SAFE FLOW OF LARGE TRAFFIC VOLUMES.

The (Bergen) Record Photo

This design in almost all instances is used in conjunction with the Department's center barrier installation program. The standard barrier installation is solid concrete, 24 inches wide at the base and 32 inches high. It is an exclusive development of the Department and is installed, principally on corridor routes, as a means of curbing the growing number of head-on collisions that were occurring. The barrier has been practically 100 per cent effective. Head-on collisions are the product of increased speed, traffic volumes, physical and mental deficiencies of the driver and lack of any effective barrier to prevent cross-overs.

Through use of the barrier* the Department has been able to effectively separate opposing directions of traffic and widen traffic lanes and shoulders without acquiring additional rights of way. In many locations the cost of such right of way, due to heavy marginal development along corridor routes, would have virtually prohibited improvement except under the aforementioned set-up.

Another key factor of the Department's aggressive "safety through engineering" program has been the overpass. Basically the overpass is a bridge that separates the flow of crossing traffic. In some instances the main highway goes over the crossing road. The two traffic flows are connected by a system of ramps that at most locations form the pattern of a cloverleaf. Scores of

* In the Hillside area on U.S. 22 prior to installation of our center barrier there were 11 deaths from "head-on" collisions in a three and a half year period. Since installation of the barrier curb, in more than four years, there have been no such fatalities.

overpasses have been constructed on the corridor routes as well as other locations within the State. They have greatly freed the flow of traffic while providing the utmost in driving safety at otherwise dangerous locations. Of these overpasses for vehicles, as well as pedestrian crossings, there have been 287 constructed in the past eight years.

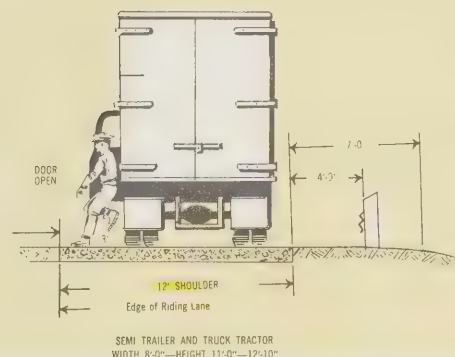
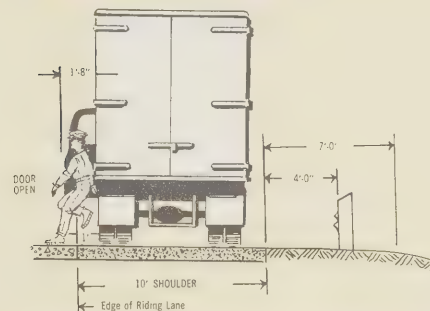
Route U. S. 1

The Department's modernization of Route U.S. 1 between the Trenton and New Brunswick areas is an example of their use in combination. Prior to reconstruction the heavily traveled corridor highway consisted of two 25-foot roadways separated by a 12-foot wide flat grassy center island. There were narrow outer shoulders and hundreds of openings for traffic to make left and U-turns through the center island.

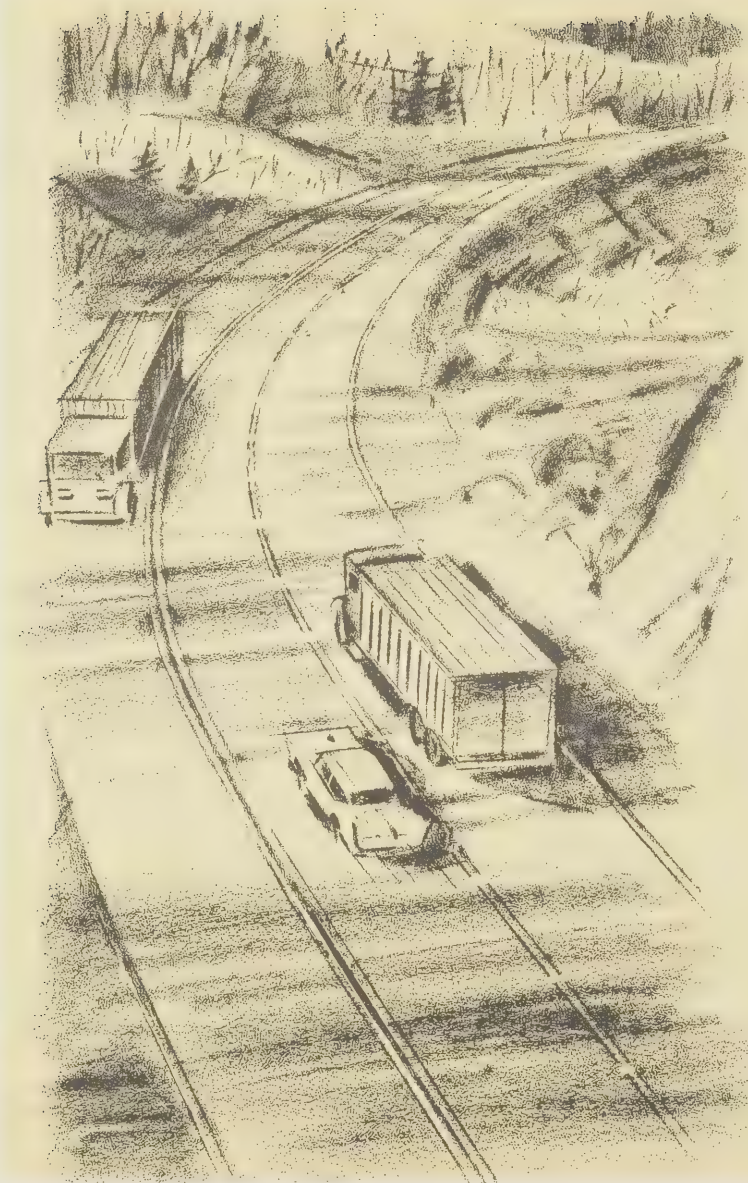
To modernize the route for mounting traffic volumes a program of successive contracts provided removal of the center island, installation of a continuous center barrier in its place, the widening and resurfacing of each roadway and adjacent outer shoulders, construction of jughandles at every principal intersecting road, traffic signal installations timed for legal travel speeds and the building of two major overpass interchanges at points where large volumes of traffic crossed the highway.

Similar traffic signal systems have been put into effect on many miles of other State highways and have resulted in time savings to motorists as well as decreasing the danger of rear-end collisions.

10 FOOT SHOULDERS ARE TOO NARROW
TO PROVIDE SAFE OFF THE ROAD STORAGE
SPACE ON HIGH SPEED HIGHWAYS



Although center barriers have not yet been installed on Route U.S. 1 north of the New Brunswick area, openings in the center island have been closed for nearly the entire length of the route in New Jersey and virtually all left turns from within the highway eliminated through jughandles and overpasses that have been built in anticipation of the northerly extension of the over-all modernization program.



Similar programs that include projects already completed and now underway will result in the same type of improvement on heavily traveled sections of Route U.S. 130 throughout the Camden area and northerly, and on Routes U.S. 46 and 22 from the New York metropolitan area westerly. In all instances these modernization projects have been focused on the heavily urban sections of the State.

Still another important engineering design that has been used by the Department to improve the safety factor on both its corridor routes and highways that fall in the area of service to recreational traffic, is known as the creeper lane. It is usually applied as the antidote for tragedy that might occur on a two-lane road that is traversing steep grades.

Simply described, it is an extra lane added to the highway to provide a riding area for slow moving vehicles. The "creeper lanes" that have been installed have eliminated the invitation for impatient drivers to carry out dangerous passing maneuvers and have greatly facilitated an even flow of traffic in hilly areas.

Outer Edge Lines

A simple and very effective measure taken in the interest of increased driving safety has been the defining of the outer edges of all State highways with reflecting white lines. The only sections of State highways not striped are where curbs border the highway. New Jersey was the first State in the nation to take such action over its entire highway system.

STRIPING THE OUTER EDGES OF ALL NEW JERSEY HIGHWAYS ADDS A SAFETY FACTOR FOR NIGHT DRIVING.

EXPANDING RESORT AND RECREATIONAL ROUTES

A program of statewide widening and dualization of subsidiary corridor routes and highways that lead to recreational areas has been vigorously prosecuted. This program has been carried out in much the same manner as that applied to modernizing the corridor routes. Successive contracts aimed at the single purpose of improving long stretches of inadequate highways, and the construction of jughandles, overpasses and center barriers, again have been the key to the Department's success in minimizing the driving risks.

Outstanding examples of the application of overpasses with their connecting ramps, to the unleashing of seashore area traffic jams that in many locations had become the rule rather than the exception, may be observed at the seashore terminal points of both Routes 37 and 72.

At the easterly end of Route 37 in the Seaside Heights area conflicting cross and merging traffic caused long tie-ups. These were eliminated by the construction of an overpass-interchange with its connecting ramps and roadways serving as traffic distributors and collectors to and from local streets.

Where Route 72 crosses Manahawkin Bay before terminating on Long Beach Island, the Department had for several years maintained a series of low-level wooden bridge structures that connected solid land areas between the mainland and the resort island.



THE ROUTE 37 INTERCHANGE AT SEASIDE HEIGHTS ALSO DISTRIBUTES TRAFFIC WITHIN A WIDE AREA.



DEPARTMENT-DESIGNED LOW-LEVEL BRIDGE LIGHTING ON THE MANAHAWKIN BAY BRIDGE WAS THE FIRST OF ITS KIND IN THE WORLD.

The flow of traffic was regularly impeded by frequent openings of the drawspan across the intercoastal waterway and at times blocked completely for extended periods due to high tides. To eliminate these conditions, the Department constructed a two-mile-long causeway consisting of four bridge structures connected by landfills.

Low Level Lighting

The principal bridge was a multi-lane, high-level structure under which vessels using the intercoastal waterway can now pass without interruption to motoring traffic. On this 2,400-foot-long structure opposing directions of traffic are separated by a concrete center barrier, and the bridge deck is lit by fluorescent lighting fixtures positioned in the bridge railings.

This innovation in bridge lighting, to provide continuous glare-free illumination at levels where the negative effects of seashore fog would be minimized, was designed by the Department and is the first installation of its kind in the world.

The same type of lighting will be utilized on a new bridge that the Department is constructing as part of Route 3 over the Hackensack River between Bergen and Hudson Counties. The acceptance and advantages of this departure from standard illumination have assured its incorporation in similar structures of the future.

The Department is actively planning for the future expansion of New Jersey's resort industry through immediate improvement of existing routes and advancing alignments for new freeways that will serve as main-line distributor routes to the shore. An instance is the Department's quick response to the needs of serving the new Sandy Hook Park area.

Having extended Route 18 as a semi-freeway from Old Bridge east to Route 9 in Middlesex County, the Department is ready to hold public hearings in the near future on its further extension easterly to the vicinity of Eatontown in Monmouth County. There it will join a new Route 35 Freeway that will distribute traffic along the coastal areas between Long Branch and the Manasquan River. Acquisition of land for the Route 35 Freeway has already begun.

Route 47 Freeway

Another concrete indication of the Department's prosecution of a resort traffic stimulation program was recently exhibited through a public hearing on a 21-mile-long section of the proposed new

Route 47 Freeway. At the present time residents of the Camden-Philadelphia metropolitan area headed for Cape May County resorts are required to use existing two-lane Route 47. This route is of "ancient vintage" and is rapidly being outmoded by seasonal traffic volumes and modern design standards. Long-term planning calls for its complete replacement by a freeway. The 21-mile section of alignment that has been designed thus far will permit this traffic to avoid the congested urban areas of Vineland and Millville. Of long-range benefit will be the desirable industrial and residential growth that will follow the "opening up" of the area surrounding the new highway facility.

Although the dualization and widening program of the Department has resulted in more adequate accommodation of resort bound traffic of today and the immediate future, action of this section of the freeway points the course that the Department will follow with respect to this and other resort routes of the State.

ROUNDING OUT SAFETY

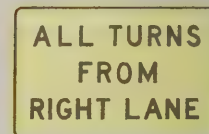
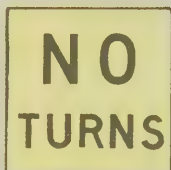
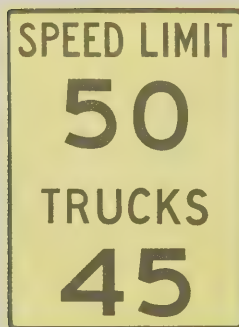
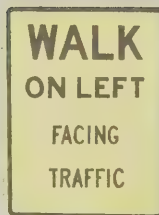
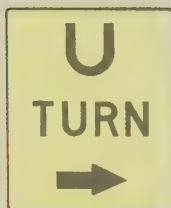
In addition to the many steps that have been taken by the Department to improve highway safety, traditional signs along State highways for directing motorists, although acceptable at the time their design was set many years ago, were clearly not in tune with the traffic volumes and highway speeds of this era. In recognition of this obvious fact, a Departmental action committee was formed for the purpose of reviewing all signing and effecting a new approach.

The committee, including top officials, spent many hours, day and night, under all weather conditions in determining how best to meet the signing needs of drivers on New Jersey highways. As a result motorists are today guided, warned and regulated on the New Jersey Highway System by means of larger and simplified sign legends that can be read both day and night without slackening travel speed. General "compass directions" have been added to route designations. Reflective materials and illumination make the signs as outstanding by night as they are by day.

Simplicity Stressed

The longest sign bridge in the United States projects huge overhead directions for Route 295 Freeway drivers while different types of illumination are matched to the particular sign needs of each specified location. Basically, the 65,000 signs on the highway system are today larger, placed strategically, simpler in design and easily read at night as well as during daylight hours.

As these new signs were developed so were the facilities for producing them. Modern methods and equipment employed within the Department's own plant have enabled it to produce, install and maintain what is now one of the best highway signing systems in the nation. Only in exceptional circumstances where it would not be economically feasible for the Department to tool up for production of certain types is the fabrication of signs handled on the outside.





SHRUBS AND VINES PROTECT SLOPES WHILE PROVIDING A PLEASING APPEARANCE.

A study team similar to that which undertook and successfully completed the sign survey was also employed for the determination of type and location of supplementary road limit delineators. As a result of their studies, efficient reflective delineators properly spaced and positioned now mark the center and outer shoulder limits of miles of State highways.

The beautification of highways has also been utilized to add extra safety for the motorists, and in many instances to reduce the cost of maintenance. No longer are center island plantings aimed at simply providing beauty, but are keyed to the functional purpose

of screening headlight glare and to act as living snow fences. Vines and bushes are planted on steep slopes adjacent to bridges and at other locations eliminating the need for time-consuming grass mowing operations while providing a pleasing appearance and eliminating soil erosion problems.

Perhaps one of the most insidious inroads on driving safety has been the physical encroachments along highways that obstruct driver vision and wear on the nerves by providing almost constant distractions. They often take the form of buildings that have been extended a few feet at a time until they sometimes meet the outer edge of roadway shoulders or encroach upon the right-of-way property of the State.

In other instances they were "permanent" major signs built within highway rights of way, or a veritable montage of temporary signs regularly placed either on or immediately adjacent to the highway curbs, shoulder or sidewalk area. For several years the Department has waged an unrelenting war on these objects. Thousands have been removed and others are going daily in spite of many intercessions to leave these encroachments as is. Court action has been necessary in numerous instances.

Advance Warnings

As a result of clear-cut rules and regulations applied to our maintenance forces and embodied in road construction contracts, drivers are now warned far in advance of work actually being



PEDESTRIAN OVERPASSES
BUILT IN URBAN AREAS
ELIMINATE EXTREMELY
DANGEROUS CROSSINGS
ON BUSY HIGHWAYS.

performed on or adjacent to any State highway by means of a standardized system of temporary directive signs; guided through the work area by trained traffic directors in instances where major operations are being performed; or protected by Department-approved flashing lights, rubber traffic cones and barricades. These provisions are supplemented by a separate safety inspection and enforcement section of the Department.

Detours Limited

Much of the emphasis that has been placed on assuring driving safety through construction areas is the result of another basic policy of the Department providing that only in extreme circumstances shall lengthy detours around a job site be utilized, thus also avoiding whenever possible use of municipal and residential streets. Even in these instances a complete system of temporary

signs is set up to guide motorists over the entire detour route for their safety and convenience.

Where a substantial volume of juvenile pedestrian traffic has been found to use an overpass facility, the protection offered by the conventional bridge deck railing has been supplemented through the erection of heavy duty wire mesh fencing of appropriate height. Such fences are incorporated in the original design on all purely pedestrian overpasses.

Adjacent to such areas as park lands and school grounds, where there would otherwise be a temptation for youngsters and other pedestrians to cross the highway at points other than the overpass, the Department has made it a practice to extend the fencing for some distance on either side of the facility.

Many years ago it was believed that the lower the speed limit applied to a highway, the greater the margin of safety afforded to the motorists. Too, speed regulation on State highways had often been subjected to purely local decisions to the point where a motorist would, without noting any physical change in either the highway or the scenery, find the speed limit sharply reduced on the basis of a municipal jurisdiction limit he had just passed.

Realistic Limits

When the Department, in 1955, took over the responsibility for setting speed limits on all State highways, it immediately adopted standards that had been formulated by national driver safety research findings and organizations. The basic premise involved is that the safety factor is improved by reduction of the differential in speed between vehicles traveling a highway.

Under the Department's continuous program of providing realistic speed limits, the most modern equipment and practices have been employed. The physical design of the highway and the character of its marginal development can now determine the legal rate of speed in a particular area.

Radar is used in studies of actual driver habits. Specially equipped cars are put through their paces to arrive at the safe speed for negotiating curves. The policy of realistic speed limits has helped contribute to the declining death rate on the State Highway System.

A fringe benefit to motorists is provided in the Department's adoption of "school-bus yellow" as the standard paint job for all its vehicles. The bright color offers a clear warning to motorists approaching a piece of highway maintenance equipment which may be temporarily stopped on the shoulder of a main artery. In so doing, it has also definitely reduced the involvement of Highway Department vehicles in motoring accidents.



THE CHANGING HIGHWAY DEPARTMENT

The Field Of Operation

In addition to increasing the safety factor for motorists as well as drivers of State Highway Department equipment, the distinctive color of all passenger vehicles was also tied directly to a general tightening-up policy on the use of Departmental cars. At the time the program was initiated, a thorough analysis was made of the purposes to which all passenger vehicles were being put.

As an immediate result the passenger car fleet was reduced by 80 or more cars with most excess vehicles sold and some transferred to other State departments. Over-all immediate savings were realized. Rigid controls governing the use and operation of Department-owned motor vehicles and their distinctive marking has largely eliminated the possibility of these cars being diverted to private use.

During the same period the over-all highway equipment situation was reviewed. Subsequently, the Department's equipment maintenance shops at Fernwood were revised, reorganized and expanded. Inventories of outmoded and war-period items were disposed of and modern inventory methods adopted.

Efficiency Emphasized

Modern designing of equipment has been effected in many areas of operation. Outstanding examples can be seen in the facilities for painting white lines and in sampling pavement cores for laboratory tests. Such vehicles increase the operating efficiency of the Department and insure a lower long-term cost. New mod-



UNIT FOR OBTAINING CONCRETE PAVEMENT CORES FOR TESTING WAS DESIGNED TO FILL A SPECIFIC PURPOSE.

ern machine shops have been built and a modernized system of operations instituted.

In addition to reorganizing the equipment maintenance plant, the evolution of an efficient security program has materially reduced loss of materials through theft. This program has involved the establishment of a well-trained guard force which patrols and checks visitors as well as personnel to the grounds, and the installation of heavy duty wire mesh fencing around the garage and warehouse area—all illuminated and patrolled.

Regular and spot inspections are also now routine procedure for the Department's many smaller but similar field installations, out of which both road maintenance and equipment forces operate.

These areas have also undergone vast changes in the interests of increased operating efficiency, improved appearance and more adequate accommodation of equipment and personnel. Under a road maintenance bureau program inaugurated in 1956, replacement of old maintenance shacks with modern buildings designed and built to meet the needs of units operating from them has been vigorously pursued. New buildings have been completed as rapidly as application for funds have been granted.

Dispersed Supply

Another facet of improved equipment operations has been the installation of gasoline and oil supply facilities at most maintenance and equipment field sites. Operators of Department equipment of all types are now required, where it is economically feasible, to obtain their gasoline and oil at these points. This has aided in reducing the operating cost of vehicles and is also a time saver.

Emphasis has been placed throughout the Department in the disposal of unused or un-needed material and in preventing its future accumulation. In the area of its land ownership this same program is applicable.

Surplus Property

Over a period of 35 years the Department had accumulated many parcels of land that a 1955 survey found neither in use nor useable by the Department. These were in the main remainders of properties that had been purchased and a major portion used for construction or improvement of a highway.





PUBLIC AUCTION SALES HAVE RETURNED UNUSED LAND PARCELS TO MUNICIPAL TAX ROLLS

In 1956 after offering these surplus parcels for sale to other state agencies, counties and municipalities, nearly 200 were put on the auction block and sold to private bidders. Two years later a second sale resulted in the disposal of 53 additional parcels. A third sale in 1961 covered 150 more. In this instance not only was a monetary return afforded the State but the land, through its sale, became available for economic use and added to the tax rolls of the municipality in which it was located. This policy extended to both the New Jersey Turnpike and the Garden State Parkway holdings.

In order to prevent future avoidable accumulation of such properties, the Department has inaugurated a property management

section within its Division of Right-of-Way Acquisition and Titles. In addition to keeping close control on surplus property, this section assures that the State will receive maximum monetary returns from all improvements (principally buildings) located on properties it has purchased through their sale prior to contract construction operations.

Stock Control

The process involved resembles similar systems that have been put into effect with relation to control of materials used in the maintenance of equipment and other routine operations of the Department. In this field new controls have been set up, stock levels defined and perpetual inventories maintained.

In its handling of office supplies the Department has eliminated many wasteful practices that resulted from lack of standardization, over-ordering and loose control in distribution. New systems and controls have materially reduced the number of forms used previously.

Central System

With regard to automotive equipment parts, a strong central stock control system has permitted establishment of a great number of distribution points. Field garages of the Equipment Bureau now stock automotive parts needed for minor repairs and certain maintenance materials, eliminating the need to travel to a central supply depot and thereby producing a substantial savings in travel time and operating expenses.

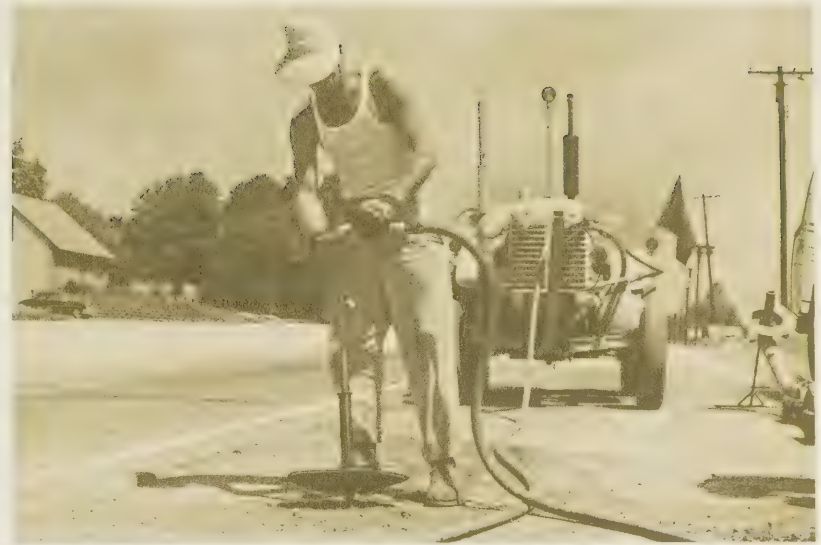
Concurrently the Department has instituted the practice of placing statewide blanket purchase orders for use in emergencies when particular small parts are not immediately available from Departmental stock. This has substantially reduced the downtime of motor vehicle equipment.

Another practice that has been initiated to aid in achieving the same end has been the institution of training courses for mechanics. Periodically factory representatives are called in by the Department to meet with our equipment personnel in order to familiarize these men with the repair and maintenance of the Department's expanded quantity of new and specialized equipment.

THE FIELD OF MAINTENANCE

Although the construction of new highways occupies the greater share of the public spotlight, the routine maintenance of over 5,000 lane miles of pavement, 18 million square yards of shoulders, 24 million square yards of roadside and drainage areas and 19 million square yards of planted areas that require mowing and plant treatment as well as the maintenance of 2,200 bridges, is a huge undertaking in itself.

To carry out this job effectively the Department has been involved in a continuing study of practical labor saving devices, efficient use of manpower and the research of materials and equipment.



ROUTINE MAINTENANCE, SUCH AS MUD-JACKING TILTED PAVEMENT SLABS, ADDS SAFETY AND EXTENDS ROAD LIFE.

As part of this study it was found that over a period of years an imbalance had developed in the Department's road maintenance labor forces. Many crews were overmanned while others were undermanned. The study showed that the over-all number of laborers could be reduced through more efficient deployment of personnel.

Revised Districts

To effect this a more highly organized system of maintenance districts and sections was created and quotas established for each of 150 maintenance crews. The reduction and streamlining of maintenance forces was accomplished through the cancellation and shifting of vacancies that occurred as the result of retirements and resignations. The end is not yet.

As the result of a series of experiments with chemical sprays to control weed and grass growth along roadsides, the Department has cut considerably into its number of mowing operations. The man-hours saved in these efforts have been put to productive use in the maintenance of additional sections of highways as they were completed without the need for a corresponding increase in manpower or equipment. The Department now regularly sprays roadsides and grass center islands with chemical preparations.

Roadside Litter

To cut down the time and cost involved in picking up tons of litter that were deposited annually along highways, the Department supplemented the efforts of many public spirited organizations with an anti-litter program of its own. Considerable savings in manpower and equipment have been effected through the erection of roadside signs calling drivers' attention to the penalties for littering and by placing containers for the deposit of litter at hundreds of points along the Highway System. The Department initiated legislation to bring about this result.

Two-way Radio

One of the most effective steps taken by the Department to modernize its maintenance operations was the installation of a completely independent statewide two-way radio network in 1956. This new direct channel of communications now interconnects over 250 mobile units installed in cars of maintenance foremen and supervisors, electrical maintenance trucks, equipment me-



AN INDEPENDENT TWO-WAY RADIO NETWORK AIDS EXPANDING MAINTENANCE OPERATIONS.

chanics' vehicles, and the cars of various survey and inspection force members. The system has permitted the Department to "do yesterday what it used to do tomorrow."

Ice and Snow Control

The two-way radio communications channel is most effective in the Department's annual snow and ice control efforts. This aspect of the highway maintenance job has grown considerably in both scope and responsibility over the past few years due to public demand for a safe highway system 365 days of the year. To approach this goal as near as humanly possible, the Department, after conducting preliminary tests, has redesigned its entire snow and ice control methods, equipment and organization. Each year now more than 1,750 pieces of equipment are



THE DEPARTMENT'S SNOW MEETINGS HAVE BENEFITED MANY STATE, COUNTY AND MUNICIPAL AGENCIES AS WELL AS PRIVATE ORGANIZATIONS RELATED TO MOTOR VEHICLE MOVEMENTS.

readied for the winter season. In order to avoid building an overly large equipment stock that lay idle for several months each year, the Department supplements its snow forces annually by contract hiring of privately owned and manned equipment on an hourly-use basis.

A contract weather service also advises the Department well in advance of threatening winter conditions and keeps tabs on changes in the weather. This information, incidentally, is made available to other State agencies.

Bare Roads

The employment of rock salt as a de-icer on a statewide basis has for the past three years cut materially into the total of man and equipment hours previously devoted to clean-up operations after a snowfall and has resulted in bare pavements being available to traffic usually within a matter of hours after a storm. Large quantities of abrasives are spread by Department equipment each year to provide traction on ice-covered roadways.

In order to more closely dovetail the operations of various county, state, municipal and private organizations involved in snow and ice control, the Department has acted as a catalytic agent during 1960 and '61 by sponsoring several area meetings for the purpose of coordinating efforts at state, county and municipal levels and defining responsibilities.

THE FIELD OF CONSTRUCTION

The practice of contracting for privately owned equipment and services has not only reflected itself to the State's advantage in our snow removal operations, but has also been a key factor in our ability to produce construction plans for new freeways and many other improvements and extensions of the State Highway System.

By employing nationally recognized engineering firms for the direct production of plans at the time they are needed while using to the maximum such staff of its own as is available, the Department has avoided assembling a very large and permanent force of its own that would later have to be disbanded.



Through this course the Department has also avoided the untimely delays that would have been occasioned in the recruitment of such a force if such recruitment were at all possible under existing State pay scales for engineers.

Also in order to avoid building up a large permanent force of inspectors to supervise increased contract construction, the Department obtained permission of the Department of Civil Service for direct recruitment of personnel to work on a temporary basis in such positions. Under these provisions the Department has been able to avail itself of the services of many well-trained individuals who are interested only in employment for the next few years.

Title Review

Another move corresponding to the augmentation of its snow forces and engineering forces has been the Department's practice of contracting for the services of private title companies in the processing of titles involved in stepped-up acquisition of

right-of-way. As a direct result of this policy, property owners now get a much quicker settlement than formerly—frequently within a week—without the necessity of the Department having to permanently enlarge its own normal working force involved in title clearances, along with the accumulation of other State benefit costs including pensions.

The over-all practice of employing outside firms and organizations to supplement our own operations has proved itself not only as a method of avoiding costly delays but has also patronized and encouraged small businesses in our State.

Lumping Contracts

To this same end the Department has initiated other moves. For many years the Department, as part of its regular maintenance function, performed ever-increasing numbers of small, and in some cases large, highway improvement jobs. As the result of new policies the Department now lets the larger jobs to outside contractors and accumulates and lumps together several small projects and offers them for competitive bid as a single contract.

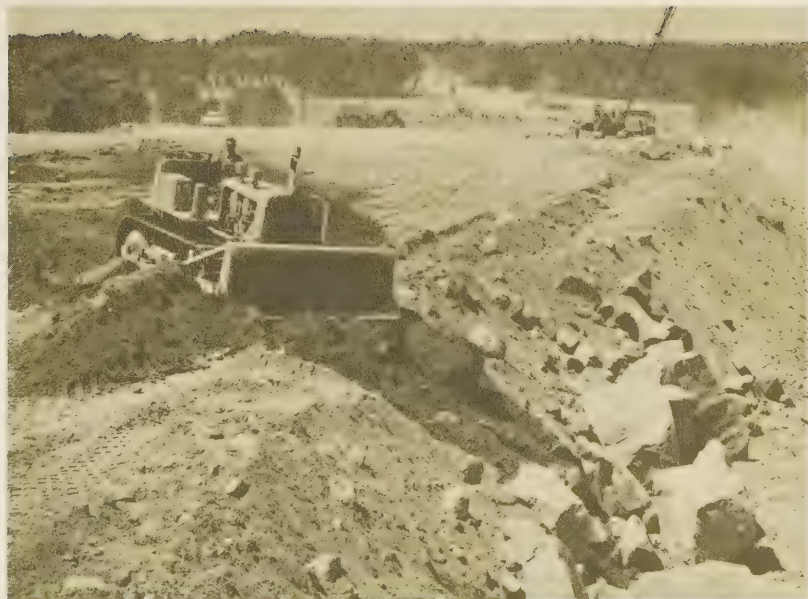
Similarly, the Department has taken advantage of the availability of outside firms in the painting of white lines on the Highway System. Although the Department's own forces perform most time-consuming and complicated traffic line operations, the painting of original white lines on many of our new highways and the repainting of straight routine lines on existing highways are now done regularly on a contract basis.

The Department also makes it a practice to incorporate as much as possible of what were formerly Department-performed operations in relation to new construction projects, into the construction contract. Another example of this practice is the installation of directional signs, underground electrical conduits and overhead lighting units as part of original construction contracts.

Electrical Contracts

Following through in this same field, the Department annually calls for bids on the installation of overhead lighting and traffic signals at locations that are not determined at the time of the bid. Here again a small contractor is able to find work for his forces while at the same time the Department is relieved of purchasing and stock piling the materials necessary for such installations. As new signalized intersections are approved, the contractor is called upon by the Department to perform his work. In order to open the door to smaller contractors the Department has purposely scaled its contract projects down in size. The average contract let by the Department since 1954 is \$596,000.

In order that smaller contractors can participate in major construction contracts, the Department permits two or more firms to pool their equipment, manpower and financial resources in the prosecution of a single contract of a size that would normally have been beyond their individual capabilities. By permitting these "joint ventures" the Department has not only improved the situation of the small contractors, but in turn has enlarged



RELATIVELY SMALL CONTRACTORS CAN NOW PARTICIPATE IN LARGE CONSTRUCTION PROJECTS BY POOLING THEIR RESOURCES.

the field of competition, thereby affording an opportunity for the State to realize lower costs in contract construction.

Contractor Prequalification

To assure itself that contractors bidding on Highway Department projects are of top caliber and financially responsible, adjustments have been made in the Department's prequalification requirements for prospective bidders. Here major emphasis has been placed upon the past performance record of contracting organizations. As a result, the Department not only capitalizes on a contractor's rating as to finances, experience, organization and plant and equipment, but also his ability to adhere to contract schedules.

Another policy of the Department that has a direct benefit to its contractors concerns "retainage." For 35 years it was the Department's practice to withhold 10 per cent of the value of the completed portion of the contract until the entire project was accepted. The Department's present practice is to require that 10 per cent be withheld until the contract is 50 per cent complete, and thereafter no further retainage. The revised practice results in freeing working capital for the individual contractors, especially the smaller concerns.

The Department has eliminated wasteful practices in its change in procedures in the furnishing of contract plans and supplementary specifications to private organizations. Prior to 1954 it was the practice of the Department to furnish complete sets of construction plans to all requestors upon the receipt of a \$5.00 deposit, to be refunded if and when the plans were returned.

Sale of Plans

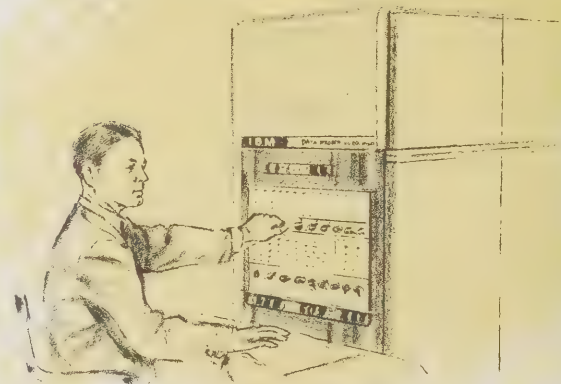
With the advent of the larger volumes of highway construction and larger printing costs of individual sets of plans, the Department established a sliding scale of rates for the sale plans. These rates recovered for the Department the cost of printing and eliminated a large number of applicants who had slightly more than a cursory interest in obtaining these plans. The net result has been a substantial monetary return to the State.

INNOVATIONS BY TRIAL AND TEST

The Department has developed an alertness to new ideas, processes and products that can be utilized to its benefit. These range over a wide scale and all are subjected to trial and testing before their adoption. Many innovations have been adopted and are now providing those who drive over New Jersey highways with better roads, greater safety and minimum inconvenience. Others are in the testing stage.

As a direct result of this program, Department personnel now process much of the data necessary to the design of new roads and bridges by time-saving methods offered through the use of electronic computers. The density of new roadway embankments after they have been compacted is now accurately measured with a portable nuclear device that performs the task in one-tenth the time formerly required to make this determination.

DATA PROCESSING SPEEDS PRODUCTION OF HIGHWAY PLANS.





SPECIALIZED SERVICE VEHICLES ARE USED TO GET THE JOB DONE SAFELY AND EFFICIENTLY.

Test, experience and trial has brought forth a new vehicle for speeding the job of one section of the Department responsible for painting thousands of miles of reflective white lines on our highways. This vehicle is a completely self-contained unit that can paint two traffic lines simultaneously, can paint two separate colors in the same operation and can operate non-stop far longer than units of previous design.

Another new vehicle developed by the Department for specialized use and in service for more than three years now constitutes a self-contained unit that drills and removes cylindrical cores from newly completed roadways in order that they may be laboratory-tested for strength.

Service Vehicles

Other such specialized equipment developed by the Department is in use by field maintenance and operations personnel in a host of tasks that range from servicing the Department's fleet of cars, trucks and other equipment to replacing traffic signal lights.

The joints in concrete pavements are now being filled with an improved mastic material that is expected to last five to ten years instead of just one year. Experiments have developed a highly skid-resistant bituminous concrete surfacing material that has been used by the Department in providing new smooth and safe riding surfaces on hundreds of lane miles of old highways with surfaces that had been worn to a slick terrazzo-like finish. Reinforcing material is now being sandwiched into layers of bituminous resurfacing materials in order to extend the pavement life.

Overhead Lighting

The high level "blanket" lighting of thousands of large and small intersections on the State Highway System with units that produce more light at smaller cost, were also products of the Department's aggressive, forward-looking program. In the near



BLANKET LIGHTING OF CHANNELIZED INTERSECTIONS PROMOTES DRIVER SAFETY AND CONVENIENCE.

future this phase alone will result in even greater safety and convenience for motorists when the latest development in mercury vapor lighting is put to work at key locations on our State highways.

Central Laboratory

The heart of much of the Department's rigid testing program is its central laboratory in Trenton. There, more than 30,000 samples of various road-building and associated materials are tested each year now by means of the latest in scientific methods and equipment. Tests range from compressive and tensile strength of some materials to the wearing qualities of others. One piece of equipment, a weatherometer, simulates the weather effect of years in a matter of days.

As a service to the State as a whole, in addition to the checks on materials for use in projects where the Department has a direct interest, the services of the laboratory are made available to the 21 counties and 567 municipalities. This modernized

laboratory also services the State Treasury Department's central purchasing agency.

The central laboratory also field tests many products and materials under actual road conditions. One example of this program concerns and governs our purchases of approximately 60,000 gallons of traffic-line paint each year. Careful records are kept on the life of each product with photographs taken at regular intervals to round out the permanent record. Somewhat similar field tests record the life-certainty of many other materials.

Actual Conditions

Currently in place on and along our highways are test installations of fencing designed to eliminate headlight glare; plastic baffles mounted atop standard concrete center barriers to achieve the same effect; a foamy plastic coating on the underside of an open bridge deck to cut the differential in time between roadway and bridge deck surface freezing conditions; and various materials that are claimed by their manufacturer to become

available in the future as durable inexpensive anti-skid coatings for highways. Beneath the surface of many miles of resurfaced highways lie various types of fabricated steel and plastic materials that have been incorporated for test purposes—all aimed at extending pavement life.

Road Heating

One of the most heavily traveled and exposed sections of a New Jersey trunk highway within a stone's throw of New York City will be the scene this winter of a season-long test that may well become a milestone in highway history. Here the Department has imbedded over eight miles of electrical cables in nearly half of the surface of a 5-lane, 800-foot-long highway stretch to try out methods, materials and controls for electrically heating steep-grade roadways sufficiently to prevent the formation of ice and snow mats during extreme winter weather conditions. In another part of the State, the concrete pavement of a slightly noticed section of State highway has transverse joints angled so that only one wheel of a vehicle can be on the joint at one time. The purpose is to find out for certain whether while providing a smoother ride for vehicles, this method of load transfer from slab to slab will stand up under the pounding of heavy New Jersey traffic volumes in a manner superior to present standard practice.

A side effect of this program of devise, apply and road-test has been the stimulating effect upon all Department employees to



COMPRESSIVE STRENGTH OF ROADWAY PAVEMENT IS DETERMINED IN THE DEPARTMENT LABORATORY.

improve materials and their own working areas in every manner conceivable. This procedure has evolved such practices as regular use of flexible roadway base and intermediate courses that can be easily laid and almost immediately pressed into service as temporary traffic lanes to ease traffic movement through work areas.

Standardization

Much has also been accomplished in the standardization of products so that units of an over-all device, such as a traffic



ROUTE U.S. 1 & 9 SECTION IS READIED FOR WINTER-LONG PAVEMENT HEATING EXPERIMENT.

signal controller or the poles, bases and arms that support individual traffic signals, are interchangeable even though produced by competitive manufacturers. The need for stocking a variety of parts is thereby reduced and emphasis has at all times been placed on stretching the highway dollar to its ultimate limit compatible with good judgment. Incidentally, we do not permit proprietary articles to form any part of our Highway System.

THE FIELD OF ADMINISTRATION

Throughout the entire period covered by this review of the Department's activities there has been much accomplished in revising administrative practices. One of the first and perhaps the most basic moves taken was the inception, in 1954, of a continuing series of standard operating procedures. Published within the Department, these Procedures are intended to insure uniform interpretation of all functions. They now cover nearly all of the Department's operations. In developing these procedures which had heretofore been passed on from generation to generation by word of mouth, many improvements in existing methods were effected.

Expert Studies

In order that completely objective specialized thinking might be applied to the job of improving administrative practices, the Commissioner arranged for three major internal reviews by nationally recognized consultants, each a specialist in his particular field. During 1957 the firm Right of Way and Legislative Consultants, Inc., of Washington, D. C., reviewed each of the many facets of our land acquisition program. Early in 1958 the accounting firm of Peat, Marwick, Mitchell & Company of Newark, New Jersey, was brought in to provide a complete survey of our auditing and accounting methods and the accuracy thereof. An independent review of the functional and organizational structure of the entire Department was undertaken by the staff of the Automotive Safety Foundation, Washington, D. C. Many recommendations that were the result of these reviews have now



become accepted standard practice within the Department. Others are in the process of being implemented for future adoption. The foregoing not only alerted us to efficient changes but firmed up our belief in many of the procedures we had instituted in recent years.

Federal Reviews

The Department has been checked and double-checked by investigators for the Blatnik Committee, also by the General Accounting Office of the Federal Government. Both organizations have

reviewed the practices of a number of states. We have yet to be the recipient of any formalized criticism.

For more than 35 years the separate divisions, bureaus and sections of the Department had originated and controlled the design of forms needed to fulfill their own specific purpose. A central forms control responsibility was placed in 1954 and as a result the over-all number of forms has been materially reduced, uniformity has been achieved and design introduced that permits over 90 per cent of these forms to be reproduced within the Department.

Just as the revision of forms enabled the Department to weed out many duplicated efforts, a review of the Department's files brought about a similar result. Undertaken in the interest of efficient conservations of space, a new system has been established for the disposal of useless and obsolete records, some dating back nearly 40 years. Carried out in accordance with State regulations, this program saw as many as seven tons of such material disposed of within a single month. The space released has been utilized for production purposes and the

release of filing cabinets made it unnecessary to place orders for such equipment for a considerable period. Microfilming has been carried out in some of our recordings.

Control Boards

Another time-saving innovation related to the field of "paper work" has been the consolidation of construction progress reports on control boards. Prior to 1954 it was necessary for key Department personnel to maintain copies of a variety of periodical reports and stacks of correspondence in order to have a ready source of information concerning the status of major operations.

Basic information on the status of all construction projects programmed or underway is now posted on three master control boards. These boards are kept current, photographed regularly, and the consolidated information made available to key Department personnel through photographic prints. Similar "at a glance" specialized control boards concerned with specific operations of right-of-way acquisition, bridge design and construction, planning, electrical and legal segments of the Department's operations now enable top administrators to keep abreast of the vastly enlarged activities for which they are responsible.

College Recruitment

A break from tradition was made by the Department in 1954 when it became the first Department of New Jersey State Government to engage in a program that called for "on-the-campus" recruitment of young engineering personnel, with a related move

CONTROL BOARDS, A MODIFIED PRIVATE INDUSTRY PRACTICE, HAVE CUT "PAPER WORK."



calling for the mandatory retirement of personnel at age 70 with provision made to permit a limited extension of service in specially equipped cases. Incidentally, the Department had approximately 125 members who ranged in age from 70 plus to 86 years of age, quite a few of whom were unable to fully function. Their retirement made room for the advancement of younger men and provided an opening for students to enter our training courses. Under its aggressive recruitment program the Department has successfully competed with private industry to place in State service many highly qualified young men—this in spite of frequent hiring rate difficulties.

Much of the success of this program hinged upon the Department's successful effort to achieve State Civil Service Commission recognition of the need for a starting salary for these recruits that would be at least close to realistic in today's economy, although lower than that being offered by private industry.

Realistic Pay Scales

Throughout the period of this review it has been the policy of the administration to achieve pay scales as nearly as possible commensurate with the job to be performed. Under this policy the Department has championed realistic pay scales for employees engaged in various activities of the many fields that are included in the Department's operations—from laborers to administrators.

Many other new Departmental personnel policies, procedures and regulations were instituted over the same period to take up the slack in personnel practices and habits.

Tied directly to efforts aimed at making salaries commensurate with the jobs to be performed was the paring off of marginal benefits that a limited number of employees were enjoying such as free railroad passes, gratuities from firms doing business with the Department and the use of Department-owned cars as a means of private transportation.

Conflict of Interest

As part of this same tightening-up process a completely new policy was instituted and enforced to eliminate all possibilities of any conflict between the personal interests of employees and their conduct of the State's business.

Two Department investigators were added to the staff for the purpose of uncovering questionable or outright dishonest practices of any Departmental employee that might impinge upon the integrity of the Department. These men have been effective as the record evidences.

Early in this administration, emphasis was placed upon conducting the Department's affairs on a businesslike basis. It was in this interest that an entrenched coffee break, which had grown into an elongated twice-daily social affair, was eliminated and

an annual Christmas party for children of Department employees sponsored by the Commissioner was substituted for traditional Seasonal office parties within the Department's business offices.

Uniform observance of established working hours has been stressed to the point where tardy entrances and "early quits" are the infrequent exception rather than the rule. All such changes had the unqualified support of the majority of Department employees.

A program under which a registered nurse employed by the Department visits the home of employees taking sick leave has,

in addition to aiding employees who are ill, had the "dividend effect" of curbing abuse of sick leave privileges.

Health and Safety

A well rounded program related to the health and safety of Department employees was initiated in 1955 and has resulted in a steady decrease in the amount of lost time due to accidents and minor illness. Basic to this program was establishment of a well equipped dispensary, the first among the State departments in Trenton. Under supervision of a Medical Doctor and registered nurses, the dispensary has served in the daily treatment of minor indispositions and major accidents incurred during the working day as well as pre-employment and return-to-work examinations after prolonged periods of illness.

The dispensary is also used in periodic mass examinations related to such diseases as diabetes, tuberculosis and cancer and its facilities utilized in conjunction with an employees' blood bank.

Safety Education

To increase employee personal safety a broad education program has been carried out. This program includes group safety meetings of maintenance workers, committee analysis and review of all motor vehicle accidents, establishment of set rules and regulations concerning use of safety devices in conjunction with maintenance and construction field operations backed up by regular inspections and special campaigns on separate facets of employee safety.

THE DEPARTMENT'S MAIN DISPENSARY OFFERS MEDICAL FACILITIES TO PERSONNEL.



The Department has actively practiced anti-discrimination in its personnel relationships and all references to race and creed were early in this administration eliminated from job application forms. Material revision of the standard form used in evaluating the work performance of individual employees issued every six months assures that all attitudes and abilities to perform the job are evaluated and the supervisor who rates the employee then makes his record available to the rated employee.

Informing Employees

New employees are now provided with informational pamphlets and brochures that fully explain the history and operations of the Department as well as matters of more personal interest such as retirement, vacation and sick leave.

Further orientation is afforded young engineers, many of whom have taken employment with the Department as the result of our campus recruitment programs. These engineers are given a 24-week schedule that rotates them through all Bureaus and Divisions where engineering functions are performed. Each of these candidates have indicated their intent to make our work their career, thus orientation enables both the individual and the Department to better decide the particular specialization that would match each individual's aptitude.

Specialized Training

"On-the-job training" within the Department has also been expanded to the benefit of employees of long service. A growing

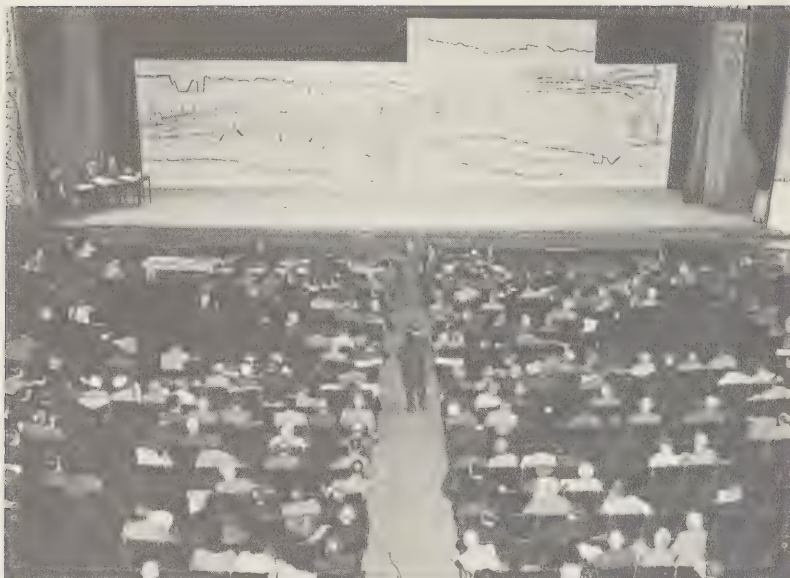
number of sessions where factory representatives have conducted one, two and three day shop lectures on automotive and other equipment repair and maintenance is not uncommon. Industry engineers have talked before groups of Department engineers on the subjects of steel, concrete, signs and other materials of use in the highway field.

Technical Meetings

A broad administrative outlook has also been marked by an increase in the number of key personnel sponsored by the Department in attending group seminars, symposiums, and technical committee meetings that have been held throughout the nation on a host of subjects ranging from engineering specialties to management methods and public information activities.

ON-THE-JOB TRAINING HAS BEEN USED TO HELP PERSONNEL KEEP PACE WITH NEW PRACTICES, MATERIALS AND EQUIPMENT.





BEFORE MAJOR HIGHWAY DESIGN IS COMPLETE, PUBLIC OPINION AND COMMENT IS SOUGHT AT PUBLIC HEARINGS.

COMMUNITY RELATIONS

Community interest has been promoted through many steps taken by this administration. Perhaps the most outstanding has been the training of over 700 Department employees to serve as a complete statewide unit in the measurement of radioactivity in the event of a nuclear emergency.

A measure of the broadened horizon of interest of the Department's personnel has been their participation in community ventures such as the Delaware Valley United Fund drive. Since 1955 the number of participating employees has risen from slightly more than 450 to 1,150 while the per capita contribution of employees has increased from an average \$2.76 to \$14.08.

The strong sense of community responsibility that has grown within the Department over the period covered by this review has also been injected into many areas of its operations that in the past had been reserved from public participation or not considered to be within the Department's scope of interest.

Property Purchases

Its responsibility to the community is again stressed by the Department when acquisition of land is necessary for construction or improvement of a highway facility. As soon as the actual boundaries of the new facility are known and funds have been made available for acquisition to proceed, property owners who will be affected are individually notified by letter and advised that a Department representative will meet with them in the near future. On many major projects detailed plans are sent to local municipal offices for public review and public meetings are held to explain right-of-way acquisition and procedures.

Although the number of parcels acquired has more than tripled over the period of this review, fair and thorough individual consideration has been maintained as a basic requirement. To assure fair property valuations at least three independent appraisals are made when a property has an apparent value of \$10,000 or more and the true market value is thus obtained. Negotiations are now conducted firmly on this basis with the result that in the past eight years less than six out of every 1,000 properties acquired in the nation's most densely populated State have involved reverting to legal condemnation.

Consideration of the financial stress placed on individual property owners in the relocation of a home or business was reflected by the Department in 1957 in its formulation of a policy aimed at affording a new avenue of relief. Under this plan the owner of an improved property is paid 25 per cent of the purchase price upon signing an agreement of sale, provided such amount does not exceed 75 per cent of his equity in the property. By this means hundreds of New Jersey property owners have been provided cash with which to make a down payment on a new home or place of business immediately instead of "hanging on the ropes" indefinitely.

Informing the Public

The Department has also greatly extended its efforts to keep the State community abreast of the changing highway picture. Through all media the Department reports almost daily to the public. These reports take the form of booklets and brochures treating on a wide variety of subjects, informational press releases that in the main deal with intimate details of work that will be performed, is underway, or has been completed and made available for public use. In nearly all instances, a small map is appended with the written word for public dissemination. Special addresses by the Commissioner and other Department officials are often reprinted and distributed widely to round out the stepped-up public information effort. To accommodate this expanded program at minimal cost the Department's own printing



facilities have been geared to take on a major portion of this publications job.

State Aid

In direct association with county and municipal officials the Department administers financial assistance and supervises construction, maintenance and improvement of local roads and streets within New Jersey in an amount that now exceeds \$16 million a year. In carrying out this function, Department administrators and engineers apply their knowledge and experience to

assure that the utmost value is received by each of the counties and municipalities for the dollars they spend on road and street facilities.

Cooperative Efforts

The broadest possible view of its responsibilities to the public at large has been taken by the Department in its many actions within recent years to maintain the history and beauty of the Garden State. By extending its efforts at keeping its roadsides free of litter it has contributed to a more pleasing statewide appearance. Through cooperation with the Blue Star Memorial Council, an effective arm of the Women's Garden Club of New

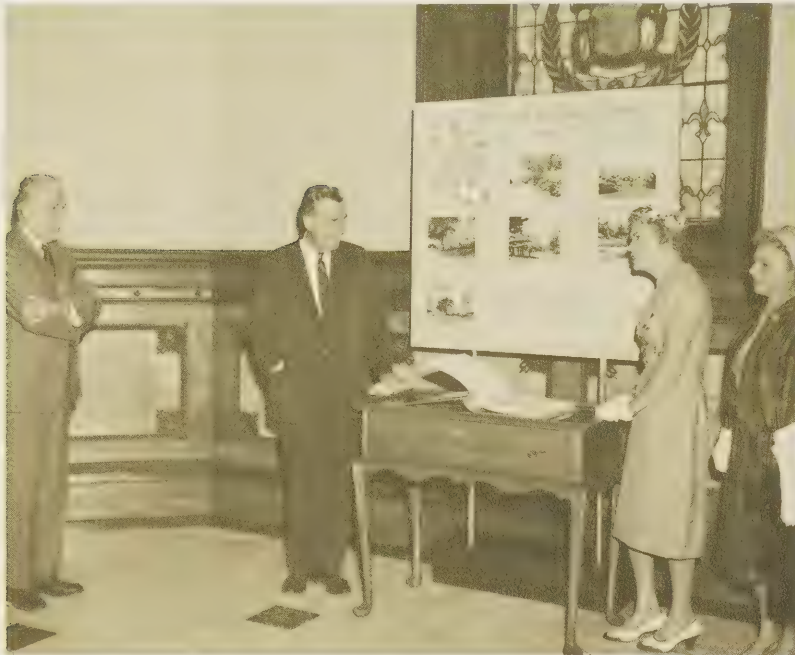


GREEN SERGEANT'S COVERED BRIDGE—RESTORED FOR POSTERITY BY THE HIGHWAY DEPARTMENT.

Jersey, in having new Interstate Route 78 singled out by legislation, it has assured the perpetuity of the Council's project—that of providing a living memorial to all those who served in the nation's wars.

Preserving Historical Sites

Dedication ceremonies on September 15, 1961, to mark complete reconstruction of New Jersey's last authentic covered bridge by the Department were a tangible result of the Department's policy to preserve valid historic structures for posterity; the Brick Tavern at Jutland was still another of such instances. While not a Department responsibility, their preservation was spearheaded, paid for and supervised by the Department in the broad public interest.



OFFICIAL PRESENTATION OF BLUE STAR MEMORIAL BOOK MARKS A COOPERATIVE VENTURE.

The Human Side

During the disastrous Delaware Valley Flood in 1955 the Highway Commissioner was designated by the Governor as Flood Coordinator. Throughout the period of this emergency, and for many months following when reconstruction of damaged public facilities were being rebuilt and replaced, State Highway Department personnel worked in close concert with personnel of local and national organizations to alleviate the damage and inconveniences caused by the disaster.

Time and time again the human side of the Department has been displayed over the past years. In some instances it has been in its internal personnel transactions, in some the advance purchase of parcels of land, and in other instances the sending of a snow plow to break the way for a snowbound chicken farmer in order that he might obtain feed for his flock and food for his family.

EXPANDED DEPARTMENT SCOPE

All of this has been undertaken within a State agency that has grown in stature from a relatively simple highway construction and maintenance unit to a humanly conscious public service transportation agency within little more than half a decade.

Coordination of the State's affiliated authorities has been exercised by the State Highway Commissioner as the Governor's liaison representative for the New Jersey State Highway Authority, New Jersey Turnpike Authority, Palisades Interstate Park Commission, Delaware River Joint Toll Bridge Commission, Delaware



THE DEPARTMENT AND ITS PERSONNEL PLAYED AN IMPORTANT ROLE FOLLOWING THE DELAWARE RIVER FLOOD IN 1955.

River Port Authority, Delaware River Bay Authority, Port of New York Authority, certain bus and ferry service problems and certain aspects of jet service at the Newark Airport.

Key Department personnel directed by the Commissioner were utilized in conducting a thorough review of the organization, practices and activities of the Delaware River Joint Toll Bridge Commission. This culminated in a complete "housecleaning" and revamping of the agency with appropriate court actions taken against individuals involved in irregularities.

Practical Results

Another tangible product of proper coordination resulted in 1955 when the Port of New York Authority unveiled its plans to double-deck the George Washington Bridge. At that time an

agreement was executed whereby the Authority would pay the State's share of the proposed freeway which would extend westward across Bergen County. This share represented 40 per cent of the total then estimated cost of \$60 million, or \$24 million. With the passage of the Federal Highway Act of 1956 the State's share on Interstate routes became 10 per cent. However, the Port Authority agreed to abide by its original agreement as well as add another \$1,000,000 with the understanding that the surplus funds would be used on Bergen County highways of service to the bridge traffic. This made available not only the \$25,000,000 to finance the Bergen County section of the Bergen-Passaic Expressway (Interstate Route 80) but also released equivalent funds for other much needed highways in other sections of the State.

Many other long-range benefits of a less dramatic nature have been brought to fruition through the coordination of these agencies. They spread through the areas of labor management, materials, methods, planning and design as well as the establishment of clearer limits of individual responsibility.

Area Studies

The scope of the Department's operations has also been further extended through the key role it has assumed in carrying out broad transportation studies of large areas of the State in basic cooperation with the Federal government. Under this expanded program the Department recently completed a full study of the transportation habits and facilities of the Newark metropolitan area.

A much larger but similar study now underway embraces Mercer, Burlington, Camden and Gloucester Counties in New Jersey and Bucks, Montgomery, Philadelphia, Delaware and Chester Counties in Pennsylvania. Its broad purpose is to aid that nine-county metropolitan region to develop a transportation system adequate for moving people and goods. In addition to the Federal government, this study is being carried out in cooperation with the Pennsylvania State Highway Department as well as the individual counties.

Nation's Largest

Preliminary planning is now being concluded for an even larger study that would carry similar objectives with regard to the ten counties of New Jersey that comprise the Northeastern New

NEW SCUDDER FALLS BRIDGE—THE PRODUCT OF JOINT EFFORTS OF THE DEPARTMENT, FEDERAL BUREAU OF PUBLIC ROADS AND THE DELAWARE RIVER JOINT TOLL BRIDGE COMMISSION.



Jersey metropolitan area. Counties included in the undertaking would be Hudson, Bergen, Passaic, Morris, Essex, Union, Middlesex, Monmouth, Somerset and Mercer. It would be concerned with all phases of transportation, Green Acres and other items, and comprise the largest such study undertaken thus far in the nation.

Transportation Agency

The concept of the Department's expansion to a full transportation agency concerned with the movement of people and goods rather than just vehicles was forged strongly in late 1958 when the State Highway Commissioner was directed by Governor Robert B. Meyner to investigate and make recommendations to assure a continuance of all rail passenger service in the face of an immediate crisis in railroad mass transportation. Among the subsequent recommendations was the formation of a separate agency within the Highway Department to cope with the "Commuter Problem." In accordance with this recommendation the State Legislature created a Division of Railroad Transportation within the Highway Department in March, 1959.

Since its organization this Division has been successful in avoiding what might well have been a complete shut-down of all rail passenger service. The key to this accomplishment was the origin of legislation that was enacted to permit the State's direct participation in the cost of providing railroad transportation service for its citizens. Such participation under this legis-



THE DEPARTMENT HAS PREVENTED OVERWHELMING HIGHWAY TRAFFIC VOLUMES IN URBAN AREAS BY RETAINING ESSENTIAL RAIL COMMUTER SERVICE.

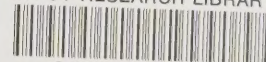
lation, to the extent of approximately \$6 million a year, has made possible not only the maintenance of a previously declining service at a continuing level, but it has permitted considerable progress on programs aimed at a long-range solution to the basic problem. Separate 1960 and 1961 reports of this Division spell out the details of its accomplishments and proposals.

LOOKING AHEAD

As the end result of the expanded scope of the Department and the revitalization of its outlook and practices that have become deeply ingrained under vigorous policies, the way for the Department's future has been paved. Just as certain as the daily traffic counts and specialized origin and destination surveys which it takes on its highways to determine the future flow of traffic, the course that has been set administratively since 1954 will continue to produce beneficial results for all our citizens, industry, business and the economic and cultural growth of our State for the years ahead.

Governor Robert B. Meyner deserves lasting credit for his inspiration and support of the multiplicity of constructive changes effected by the management of the Department. Appreciation is also extended to the Legislators who have supported the Department's policies, the many Freeholder groups, Municipal officials, public spirited citizens and, on the average, an understanding Press and last but not least the Dedicated Departmental personnel.

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